

United States Government

Department of Energy

Ohio Field Office

# memorandum

Fernald Closure Project

DATE: DEC 1 2004

REPLY TO

ATTN OF: FCP:Reising

DOE-0071-05

SUBJECT: **FERNALD CLOSURE PROJECT REVISED FINAL DRAFT RISK-BASED END STATE ("END STATES") VISION**

TO: Paul Golan, Acting Assistant Secretary for Environmental Management, EM-1/FORS

Attached for your review is the third version of the Fernald Closure Project (FCP) Draft Risk-Based End State (RBES) Vision. The document has been updated to reflect recent events and stakeholder comments received, as well as Headquarters review comments.

The last of the series of public meetings on the RBES Vision document effort was held November 16, 2004 at the FCP. During that meeting, seven variances/alternatives were discussed. The public was informed that FCP was going to pursue Variances 3-A, 4-A and 4-B through the normal CERCLA remedy decision process employed at the FCP for the past 15 years.

It should also be noted that the FCP is not proposing to change the terminology RBES to End States or Variances to Alternatives because this would entail changing almost all of the graphics, etc. and would be an added expense and schedule delay.

The document will also be available on the DOE-OH website at [www.ohio.doe.gov/rbes.asp](http://www.ohio.doe.gov/rbes.asp).

If you have any questions, please contact me at 513-648-3101.

  
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**FINAL DRAFT**

**RISK-BASED END STATE VISION**



**Fernald Closure Project  
December 1, 2004  
Revision 3**

## EXECUTIVE SUMMARY

This document provides a description of the Risk-Based End State (RBES) Vision for the U.S. Department of Energy (DOE) Fernald Closure Project (FCP). The purpose of the RBES document is to effectively communicate the RBES Vision of the FCP site to Regulators, DOE Headquarters (HQ), and Stakeholders.

DOE Policy 455.1, **Use of Risk-Based End States**, was issued in July 2003 as a follow-up to DOE's 2002 Top-to-Bottom Review. The intent of the policy is to ensure that DOE's nationwide cleanup effort is driven by clearly defined, risk-based end states, particularly for those sites that do not yet have cleanup agreements in place.

The DOE guidance document, *Guidance for Developing a Risk-Based, Site-Specific End State Vision*, was also released in July 2003 and finalized in September. The FCP has prepared this document as a deliverable in accordance with the guidance. The guidance addresses both the sites that have formal cleanup plans already in place (like Fernald), as well as those sites that do not yet have formal agency-approved Records of Decision.

Briefly, the guidance calls for each site's Vision to initially include *all* technically supportable, risk-based opportunities for consideration. From there, a short-listing of opportunities for further consideration is to be formulated. Note that Fernald is currently at the initial stage of risk-based opportunity identification; therefore, no short-listing has yet been conducted.

For sites that have formal cleanup agreements in place, the initial Vision "brainstorming" is not to be limited by the constraints of the cleanup agreements. Rather, at this stage of the process, the brainstorming of ideas is to consider all technically supportable possibilities, regardless of current agreement requirements. It is important to note that the RBES is not a decision document and is being developed pursuant to the DOE guidance document to identify opportunities.

The short-listing process will then include consideration of the existing cleanup agreements, and the potential need for (and benefit of) modifications to existing agreements. Again, this short-listing is to be done as a second step in full consultation with Stakeholders and Regulators. Note that in order to accommodate current agreement requirements, the guidance calls for the identification of "Variances" between current agreements and the RBES Vision.

In its response to the Assistant Secretary for Environmental Management's (EM) Top-to-Bottom Review, the Fernald team outlined an aggressive approach to satisfying each of the six major recommendations carried forward from the review. Fernald's response reaffirmed the team's strategy and execution approach to achieve accelerated site closure in 2006, and outlined the needed support from DOE-HQ and Congress to achieve the 2006 objective. The aggressive acceleration actions contained in the Fernald team's response have been carried forward to the Performance Management Plan (PMP).

Prior to the development of initiatives in response to the Top-to-Bottom Review, Fernald's Performance Measurement Baseline called for closure in 2009. Fernald is implementing reform initiatives that reduce project risk and achieve closure three years earlier in 2006. Acceleration of closure carries the obvious benefit of earlier reduction of risk associated with Fernald contamination.

The Fernald site consists of a land area of 1,050 acres with about 140 acres dedicated to the original production facility buildings, and 37 acres dedicated to the historical waste storage areas (the waste pits and silos). The site is near Ross, Ohio, a farming community located about 20 miles northwest of Cincinnati. The prevailing land use surrounding the facility is residential/farming, with light industrial and commercial activities nearby.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedial investigations and feasibility studies have been completed for each of the five operable units (OUs). Final Records of Decision (RODs) to establish cleanup levels and document the cleanup remedies have been signed for each OU by DOE, U.S. Environmental Protection Agency (EPA), and Ohio EPA.

The Remedial Investigation/Feasibility Study (RI/FS) evaluations that supported each ROD considered risks to both on-site workers and off-site populations. The process of "risk-balancing" has been fully integrated into the remedial decisions outlined in each of the five RI/FS evaluations and RODs.

Through Fernald's five RODs, it was decided that the site's smaller volume of more highly contaminated material will be disposed off site and the larger volume of material with low levels of contamination that can be safely contained will be disposed on site. The OSDF is a result of this "balanced approach" to waste management at Fernald. Excavated soil and debris will be disposed in the OSDF, or if it does not meet the on-site WAC, at an off-site disposal facility.

One of the requirements of the 2003 Fernald Closure Contract Modification Number M038 is the need to identify the most cost-effective groundwater infrastructure to remain at the site when the other baseline work elements defining Site Closure are complete at the end of June 2006. While technically not a RBES Vision opportunity (since the full restoration of the Great Miami Aquifer will occur to the same end state sometime after 2006 regardless of the treatment/infrastructure decisions being contemplated under Modification M038) Fernald is engaged with the FCAB and the Regulatory Agencies regarding the possibilities and options for the D&D of groundwater treatment infrastructure in time for the resultant surface and subsurface soil and debris to be placed into the OSDF before that facility permanently closes.

The projected final land use of the FCP site is an Undeveloped Park with limited public access to the site. Risk evaluations, conducted for each of the OUs of the FCP per EPA guidance, used the Undeveloped Park as the projected final use of the FCP. The Recreational User was the primary receptor used to establish cleanup levels at the site.

An Environmental Assessment (EA) was prepared in 1998 to finalize the land use decision for the FCP (DOE, 1999b). The EA proposed that more than 900 acres of the site be restored and dedicated as an Undeveloped Park. The EA also proposed a 23-acre portion of the FCP that may be considered for development to support community needs and restated the commitment of the approximately 75-acre area that would remain dedicated to the On-Site Disposal Facility (OSDF). Public review of the EA supported the proposed land use of the FCP and the land use decision was documented in a Finding of No Significant Impact (FONSI) issued in June 1999.

The future mission for Fernald will be Legacy Management of the areas of concern left on site. The decisions concerning the final list of hazard areas and any s to be left on site, will be evaluated collaboratively with the participation of the Fernald Citizen's Advisory Board (FCAB), EPA, and Ohio EPA. Both the FCAB and the Regulators have strongly pointed out that the risk-based decisions already reached for the site to arrive at the original cleanup remedies in the RODs have produced a solid "RBES Vision" for Fernald that requires little further tailoring.



During October 2003, initial meetings were held with the FCAB and the Regulatory Agencies to identify issues of concern with the changes that may be contemplated under the RBES Vision. It was clear from the initial interactions that the FCAB and the Regulators are not amenable to changes in groundwater cleanup levels, surface water discharge limits, or other changes that significantly increase residual contamination following remediation, or releases during the process. The FCAB and agencies also raised concerns that the RBES process could create distractions and resource demands that ultimately detract from achieving the 2006 closure schedule if not managed wisely, considering the progress of remediation already being made in the field.

Provided Fernald's end state remains health and environmentally protective at levels consistent with the existing RODs, the participants are willing to consider new benefit-seeking initiatives through the RBES process that remain consistent with the 2006 schedule.

The FCP is a 2006 Accelerated Completion Site with an approved PMP. The RBES Guidance requires only the RBES associated maps, conceptual site models (CSM), and narratives; therefore, no current state information is provided in this document.

## TABLE OF CONTENTS

	<u>Page</u>
1.0 Introduction .....	1-1
1.1 Organization of the Report .....	1-1
1.2 Site Mission .....	1-1
1.3 Status of Cleanup Program .....	1-3
1.3.1 Regulatory and Stakeholder Inputs Received to Date .....	1-7
1.3.2 Fernald's Decision-Making Context .....	1-8
(Based on Previous Risk-Based Remedy Decisions)	
1.3.3 Opportunities and Challenges Facing Future RBES Decisions.....	1-9
1.3.4 Lessons Learned Regarding RBES Decision Making - Groundwater-Based Opportunities.....	1-11
2.0 Regional Context Risk-Based End State Description .....	2-1
2.1 Physical and Surface Interface.....	2-1
2.2 Human and Ecological Land Use .....	2-1
3.0 Site Specific Risk-Based End State Description .....	3-1
3.1 Physical and Surface Interface.....	3-1
3.2 Human and Ecological Land Use .....	3-3
3.3 Site Context Legal Ownership.....	3-5
3.4 Site Context Demographics .....	3-5
4.0 Hazard Specific Discussion.....	4-1
4.1 Hazard Area 1 – On-Site Disposal Facility .....	4-1
4.2 Hazard Area 2 – Subsurface Soils/Sediments.....	4-6
4.3 Hazard Area 3 – Surface Water/Groundwater .....	4-10
4.4 Hazard Area 4 – Infrastructure .....	4-14
References .....	R-1
Attachment A: Variance Report Fernald Closure Project .....	A-1
Attachment B: Fernald RBES Press Articles, Stakeholder Comments, and Meeting Handout .....	B-1
Attachment C: Groundwater Toolbox Information Excerpts .....	C-1

## FIGURES

	<u>Page</u>
<u>2.1b. Regional physical and surface interface – RBES</u> .....	2-2
<u>2.2b. Regional human and ecological land use – RBES</u> .....	2-3
<u>3.1b. Site physical and surface interface – RBES</u> .....	3-2
<u>3.2b. Site human and ecological land use – RBES</u> .....	3-4
<u>3.3b. Site legal ownership – RBES</u> .....	3-6
<u>3.4b. Site context demographics map – RBES</u> .....	3-7
<u>4.0b. Site wide hazard map – RBES</u> .....	4-2
<u>4.1b1. Hazard Area 1 OSDF map – RBES</u> .....	4-3
<u>4.1b2. Hazard Area 1 OSDF CSM – RBES</u> .....	4-4
<u>4.2b1. Hazard Area 2 subsurface soils/sediments map – RBES</u> .....	4-7
<u>4.2b2. Hazard Area 2 subsurface soils/sediments CSM – RBES</u> .....	4-8
<u>4.3b1. Hazard Area 3 surface water/groundwater map – RBES</u> .....	4-11
<u>4.3b2. Hazard Area 3 surface water/groundwater CSM – RBES</u> .....	4-12
<u>4.4b1. Hazard Area 4 infrastructure map – RBES</u> .....	4-15
<u>4.4b2. Hazard Area 4 infrastructure CSM – RBES</u> .....	4-16

## TABLES

	<u>Page</u>
1.1. FCP cleanup program status.....	1-4

## ACRONYMS

AWWT	Advanced Wastewater Treatment
BTV	Benchmark Toxicity Value
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COEC	Constituent of Ecological Concern
CPRG	Cross-Media Preliminary Remediation Goals
CSM	Conceptual Site Models
D&D	decontamination and dismantlement
DOE	Department of Energy
EA	Environmental Assessment
EM	Environmental Management
EPA	Environmental Protection Agency
FCAB	Fernald Citizen's Advisory Board
FCP	Fernald Closure Project
FONSI	Finding of No Significant Impact
FRESH	Fernald Residents for Environment, Safety and Health
FRL	Final Remediation Level
HDPE	High-Density Polyethylene
HI	Hazard Index
HQ	Headquarters
IAWWT	Interim Advanced Wastewater Treatment
ILCR	Incremental Lifetime Cancer Risk
NPDES	National Pollution Discharge Elimination System
OSDF	On-Site Disposal Facility
OU	operable unit
PMP	Performance Management Plan
RBES	Risk-Based End State
RCRA	Resource Conservation and Recovery Act
RIMIA	Receiving & Incoming Material Inspection Area
ROD	Record of Decision
SEP	Sitewide Excavation Plan
SERA	Sitewide Ecological Risk Assessment
SPIT	South Plume Interim Treatment Facility
SSOD	Storm Sewer Outfall Ditch
TTA	Tank Transfer Area
WAC	waste acceptance criteria

## UNITS

cfs	cubic feet per second
gpm	gallons per minute
ppb	parts per billion
ppm	parts per million

## **1.0 INTRODUCTION**

### **1.1 ORGANIZATION OF THE REPORT**

This report describes the FCP site mission, cleanup program, and the RBES Vision for the regional context, the site context, and the hazard specific areas. The RBES document is divided into four major sections. Section 1 has provided an executive analysis of the FCP RBES Vision and a summary of the FCP site mission (past, present, and future), the status of the FCP cleanup program, and decision-making context. Section 2 describes the Regional Context RBES, Section 3 describes the Site Specific RBES, and Section 4 provides summaries of the specific hazards associated with the RBES for the FCP. Attached to the RBES Vision document is the Variance Report that summarizes the differences between the current agreements for Fernald's end state and the RBES Vision and several key Fernald RBES press articles.

The RBES Vision for the FCP will be depicted through maps, conceptual site models (CSM), and narratives. The RBES Guidance requires only the RBES associated maps, CSM, and narratives; therefore, no current state information is provided in this document. The RBES maps for the Regional Context, Site Context, and Hazard Specific Areas for the FCP are provided in this document and are described below. The setting for the RBES maps is the point in time when final land use is achieved and all long-term stewardship activities are in place, i.e., at the time of site closure. In addition, the RBES maps enable the graphical depiction of the hazards, their associated risks, and the affected populations or receptors.

The Regional Context maps place the FCP site within the context of southwestern Ohio. The Site Context maps encompass the FCP site and the lands immediately adjacent to the site. The Hazard Specific maps provide the most detail of the areas of the FCP site that contain hazards that may present risks to human health or the environment.

CSM are intended to communicate risk information to DOE managers, the regulatory community, and the public. CSM have been built, in block diagram form, to provide information regarding the hazards, pathways, receptors, and barriers (RBES only) between the hazards and receptors. A narrative statement accompanies each CSM to describe in detail the features of the model.

Linking the hazard specific maps to the CSM with supporting narrative will depict the path to be taken to complete the RBES in respect to the hazard areas of concern for the FCP site. Mapping contained in this report was completed by MSE Technology Applications Inc., located in Butte, Montana.

### **1.2 SITE MISSION**

The Fernald Closure Project (FCP) is located approximately 18 miles Northwest of downtown Cincinnati, Ohio. The FCP is owned and managed by the U.S. Department of Energy (DOE) and encompasses 1,050 acres. Fluor Fernald Inc., has been contracted by DOE to remediate and restore the FCP which is scheduled to be complete in 2006. Currently, the remediation of the FCP is approximately 60% complete (Table 1.1). Remediation activities are clearly visible at the site in the 140-acre former Production Area as the removal of the production facilities is near completion and remediation of the underlying soil is in process. Remediation of the 37-acre Waste Pit Area is also nearing completion and construction of the infrastructure required to support remediation of Silos (e.g., treatment facility) is in process. Borrow activities are also very visible in the southeast portion of the FCP and construction of the On-Site Disposal Facility is clearly visible in the eastern portion of the FCP.

The community of Ross is located a few miles northeast of the FCP. Immediately adjacent to the FCP site boundary are a combination of agricultural fields and residential housing. The southern and

eastern boundaries of the FCP are dominated by agricultural fields with some interspersed housing. The northern and western borders of the site are bordered by private residences and agricultural fields, although some small businesses and one industrial firm are also present. Some residential property along the western boundary has been recently converted to commercial property. Within a mile of the FCP, several areas of new residential development are being constructed. Overall, the currently status of the property surrounding the FCP is not expected to significantly change within the next few years.

In December 1984, when the Fernald Site was still in uranium production mode, the release of approximately 200 pounds of uranium from a plant dust collector was reported to the National Response Center. This release notification focused nationwide attention on the environmental issues at the Fernald facility and produced increased oversight by U.S. Environmental Protection Agency (EPA) and Ohio EPA. At about the same time, local residents at the site formed a watchdog group entitled the Fernald Residents for Environment, Safety and Health (FRESH). The high public and political profile surrounding activities at the site has remained relatively unchanged since the initial groundswell of attention in 1984.

Through the subsequent CERCLA field investigations, it became clear that Fernald's historical operations had affected a significant off-property land area. Soil concentrations of approximately 20 parts per million (ppm) for total uranium (about five times background) were identified in surface soil samples collected off property, immediately adjacent to the eastern and northeastern boundary of the facility. Uranium was detected at above-background concentrations (generally less than two times background) in a widespread area off the Fernald property. It was estimated that approximately 11 square miles of surface soil was impacted at these low concentrations. The source of these low concentrations was emissions of dust particles to the atmosphere from plant stacks over the Fernald site's 37-year production history. As documented in the Fernald CERCLA Baseline Risk Assessment, soil uranium concentrations of about 1.5 ppm above background correspond to an incremental lifetime cancer risk (ILCR) of about  $10^{-6}$  for a hypothetical residential/farming land use scenario (DOE, 1995a). In essence, the entire 11-square mile area of above-background contamination surrounding the Fernald site fell within the  $10^{-6}$  risk boundary identified during the Baseline Risk Assessment.

To facilitate environmental restoration, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) work scope for the Fernald site was divided into five operable units (OUs) each with the corresponding Records of Decision (ROD): Waste Pits - OU1 (DOE, 1995c); Miscellaneous Waste Units - OU2 (DOE 1995d); Production Area Facilities and Legacy-Waste Inventories - OU3 (DOE, 1994a & DOE, 1996a); Silos OU4 (DOE, 1994b); and Environmental Media OU5 (DOE, 1996b). CERCLA remedial investigations and feasibility studies are complete for each of the OUs, and five final Records of Decision (RODs) have been signed to establish cleanup levels and document the chosen cleanup remedies for each OU. Since the RODs were signed, field cleanup across all of the OUs has been the primary focus. Each RI/FS evaluation also contained a Comprehensive Risk Analysis and Risk Evaluation (CRARE). The CRARE was initially developed in conjunction with OU 4 and updated in each subsequent OU.

The Remedial Investigation/Feasibility Study (RI/FS) evaluations that supported each ROD considered risks to both on-site workers and off-site populations. The process of "risk-balancing" has been fully integrated into the remedial decisions outlined in each of the five RI/FS evaluations and RODs.

Through Fernald's five RODs, it was decided that the site's smaller volume of more highly contaminated material will be disposed off site and the larger volume of material with low levels of contamination that can be safely contained will be disposed on site. The OSDF is a result of this "balanced approach" to waste management at Fernald. Excavated soil and debris will be disposed in the OSDF, or if it does not meet the on-site WAC, at an off-site disposal facility.

### 1.3 STATUS OF CLEANUP PROGRAM

As of September 2004, cleanup is about 72% percent complete, based on total volumes of remediation waste that has been permanently dispositioned at the respective off-site and on-site disposal locations. A summary of the major remediation projects and their current status is provided in Table 1.1.

At the time that uranium production ceased at Fernald and the RODs were signed bringing an end to the CERCLA investigative studies, it was determined that there were approximately 3.1 million cubic yards of remediation waste that required action and approximately 134 acres of on-site and off-site groundwater contamination in the Great Miami Aquifer that needed to be addressed. A key factor in the site-wide approach to the cleanup remedies, considering the significant volumes of waste involved, was the need for an on-site disposal decision in order to cost-effectively address the large quantities of soil and demolition debris materials that would be generated. However, because an on-site disposal facility would need to be located over the Great Miami Aquifer (a regulated sole-source aquifer that serves as the principal drinking water supply in the region), waivers from State of Ohio solid waste disposal siting prohibitions were necessary to accommodate this need. In order to gain the above referenced waivers, the collective remedies approved by the regulatory agencies employed a "balanced approach" in which the higher volume, lower concentration materials would be allowed to remain on site (approximately 77 percent of the total). The lower volume, more heavily concentrated materials (23 percent of the total) were disposed of off site, and all affected portions of the Great Miami Aquifer were restored to full beneficial use.

Under this site-wide balanced approach, the final remedial actions selected in the original RODs include: Production-facility decontamination and dismantlement (D&D); On-site disposal of the majority of contaminated soil and D&D debris in an engineered 2.7 million cubic yard On-Site Disposal Facility (OSDF); Off-site disposal of the contents of the two K-65 Silos (Silos 1&2) and Silo 3; D&D and disposal of all Silos structures and infrastructure; Off-site disposal of all waste pit materials, caps, and liners; and Off-site disposal of the nuclear product inventory, containerized legacy waste inventories, and the limited quantities of soil and debris not meeting on-site waste acceptance criteria (WAC). The final remedial actions also included extraction and treatment of contaminated groundwater as necessary to restore the Great Miami Aquifer to full beneficial use, and achieve performance-based mass and concentration discharge limits for release of water to the Great Miami River as specified in the OU5 ROD (DOE, 1996a).

As of September 2004, the following cleanup benchmarks have been achieved:

- 818,663 tons of Waste Pits material have been shipped off site and 107 unit trains have made the round trip from Fernald to the Envirocare disposal facility in Utah;
- More than 1.77 million cubic yards of contaminated soil and debris has been excavated and placed in the OSDF;
- 7 of 8 individual disposal cells are in place;
- All 10 uranium production plants have been dismantled;
- 177 individual structures have been dismantled;
- Nuclear materials disposition is complete;
- 6.4 million cubic feet of low-level waste has been shipped by truck to the Nevada Test Site for disposal;
- 64 percent of the 1050-acre site footprint has been certified as meeting radiological and chemical cleanup levels; and
- 16 billion gallons of contaminated groundwater has been pumped and treated, as necessary, to achieve surface water discharge limits.

**Table 1.1. FCP Cleanup Program Status.**

Project	Work Scope	Status as of September 2004	2006 Strategy	Completion
Aquifer Restoration	<ul style="list-style-type: none"> <li>Remediate contaminated portions (approx. 170 acres) of the Great Miami Aquifer</li> <li>Treat stormwater and wastewater resulting from site remediation activities</li> </ul>	<ul style="list-style-type: none"> <li>Project - 66% complete</li> <li>Extracted more than 16 billion gallons of water from the aquifer since 1993</li> <li>Treated more than 10.5 billion gallons of water</li> <li>Removed more than 6,390 pounds of uranium from aquifer since 1993</li> </ul>	<ul style="list-style-type: none"> <li>Design and construct a Converted Advanced Wastewater Treatment Facility to complete aquifer restoration.</li> </ul>	2021
Building Demolition	<ul style="list-style-type: none"> <li>Dismantle 223 former production plants, support structures, and associated components</li> </ul>	<ul style="list-style-type: none"> <li>Project -- 70 % complete</li> <li>Dismantled 177 structures</li> <li>Completed Safe Shutdown in March 1999, two years ahead of schedule and \$7 million under budget</li> <li>Last production building dismantled May 2004.</li> </ul>	<ul style="list-style-type: none"> <li>Continue aggressive demolition of buildings and miscellaneous structures</li> </ul>	2006
Soil and Disposal Facility	<ul style="list-style-type: none"> <li>Remediate and dispose of contaminated soil</li> <li>Certify site as clean and perform natural resource restoration</li> </ul>	<ul style="list-style-type: none"> <li>Project 68 % complete</li> <li>Cell 1 – filled and capped</li> <li>Cell 2 – filled and capped</li> <li>Cell 3 – filled and capped</li> <li>Cell 4 – 92 % filled</li> <li>Cell 5 – 52 % filled</li> <li>Cell 6 – 42 % filled</li> <li>Cell 7 – 4% filled</li> <li>Excavated and dispositioned over 1.77 million cubic yards of contaminated soil</li> <li>Over 64 % of the site is certified "clean"</li> <li>Completed seven natural resource restoration projects</li> </ul>	<ul style="list-style-type: none"> <li>Adopt self-performance and aggressive approach to work</li> <li>Resequence work with more parallel activities</li> <li>Greater integration with D&amp;D and Waste Pit projects</li> <li>Add Cell 8 to accommodate scope increase</li> </ul>	2006
Silos 1 and 2	<ul style="list-style-type: none"> <li>Remove 8,900 cubic yards of low-level waste from two concrete silos</li> <li>Chemically stabilize waste and ship off site for disposal</li> </ul>	<ul style="list-style-type: none"> <li>Project - 68 % complete</li> <li>Construction is complete</li> <li>Accelerated Waste Retrieval Subproject – 100 % complete</li> </ul>	<ul style="list-style-type: none"> <li>Use commercial design-build approach to integrate project activities and accelerate schedule</li> <li>Implement a detailed constructability process to maintain required coordination of efforts</li> <li>Revise design to increase operating flexibility and reduce downtime</li> <li>Develop options for transportation and disposal</li> </ul>	2006



Project	Work Scope	Status as of September 2004	2006 Strategy	Completion
Silo 3	<ul style="list-style-type: none"> <li>Remove 5,100 cubic yards of low-level waste from one concrete silo</li> <li>Ship waste off site for disposal</li> </ul>	<ul style="list-style-type: none"> <li>Project - 78 % complete</li> <li>Construction is 100% complete</li> <li>Facility directed to hot standby with ability to initiate operations with two weeks notification.</li> </ul>	<ul style="list-style-type: none"> <li>Prepared ROD Amendment and Revised Proposed Plan to allow for treatment only as required to meet permitted disposal facility's waste acceptance criteria</li> </ul>	2006
Waste Pits	<ul style="list-style-type: none"> <li>Remediate the contents of six waste pits containing low-level radioactive waste byproducts of uranium and thorium processing</li> </ul>	<ul style="list-style-type: none"> <li>Project – 95 % complete</li> <li>128 unit trains pulling 7,609 cars have shipped 818,663 tons of waste</li> </ul>	<ul style="list-style-type: none"> <li>Operate dryers 24/7 to address increased waste tonnage</li> <li>Lease additional railcars</li> <li>Evaluate plans to reduce number of shipments to Envirocare</li> </ul>	2004
Waste Management	<ul style="list-style-type: none"> <li>Characterize, sample, package, and dispose of low-level radioactive, hazardous, and mixed waste site inventories</li> <li>Provide site-wide support for waste planning and off-site shipping</li> <li>Emphasize waste minimization, recycling or reuse wherever practical</li> </ul>	<ul style="list-style-type: none"> <li>Project - 99% complete</li> <li>Shipped 6.6 million cubic feet low-level waste to the Nevada Test Site for disposal – 100 % complete</li> <li>Shipped 163,912 low-level liquid mixed waste off site for incineration – 93% complete</li> <li>Transferred 595,266 cubic feet low-level waste to Waste Pits Remedial Action Project – 99 % complete</li> <li>Transferred 792,510 cubic feet low-level waste to OSDF – 100% complete</li> <li>Shipped 56,127 cubic feet low-level mixed waste off site for treatment – 98% complete</li> <li>Dispositioned all containerized waste on Plant 1 Pad</li> <li>Approximately 270 containers remaining in inventory</li> <li>Continue characterization, visual inspection, and packaging of uranium waste</li> </ul>	<ul style="list-style-type: none"> <li>Maximize on site disposition of low-level waste</li> <li>Pursue off-site treatment of mixed waste and low-level waste</li> </ul>	2004

Project	Work Scope	Status as of September 2004	2006 Strategy	Completion
Nuclear Material Disposition	<ul style="list-style-type: none"> <li>Characterize, package, and ship nuclear materials off site</li> </ul>	<ul style="list-style-type: none"> <li>Project – 100% complete</li> <li>Dispositioned 31 million pounds of nuclear product through: <ul style="list-style-type: none"> <li>Transfer to other DOE site for programmatic use</li> <li>Sale to private sector</li> <li>Transfer to Portsmouth Facility for interim storage under DOE's Uranium Facility Management Group (9.1 million net pounds transferred since June 1999)</li> <li>Burial of Department of Defense materials off site</li> </ul> </li> </ul>		2002

As the above metrics serve to illustrate, the Fernald cleanup is mature and the site is on target for a baseline closure in March 2006. Upon closure in March 2006, all that will remain will be the ongoing actions necessary to achieve final cleanup of the Great Miami Aquifer restoration and the long-term stewardship activities necessary to accommodate and maintain the designated final land use. At closure, approximately 975 acres of the site property will be restored to permit beneficial use as an Undeveloped Park (the selected final land use objective), and approximately 75 acres will be dedicated to the footprint of the OSDF. Other than the disposal facility, no sources of contamination above the site's final remediation levels (FRLs) will remain on site when cleanup is complete.

### **1.3.1 Regulatory and Stakeholder Inputs Received to Date**

This document has been prepared pursuant to the DOE Guidance for Developing a Site-Specific Risk-Based End State Vision (DOE, 2003a). The future mission for Fernald will be Legacy Management of the areas of concern left on site. The decisions concerning the final list of hazards to be left on site, will be evaluated collaboratively with the participation of the FCAB, EPA, and Ohio EPA.

During October 2003, initial meetings were held with the FCAB and the Regulatory Agencies to identify issues of concern with the changes that may be contemplated under the RBES Vision. It was clear from the initial interactions that the FCAB and the Regulators have significant concerns with the changes outlined in this RBES Vision/Variance. The FCAB and agencies also raised concerns that the RBES process could create distractions and resource demands that ultimately detract from achieving the 2006 closure schedule if not managed wisely, considering the progress of remediation already being made in the field.

To illustrate the type of issues and concerns that are currently on the minds of the local and political community regarding emerging changes for the FCP, comments and correspondence are included in Attachment B to this document:

- An October 9, 2003 congressional letter, signed by Ohio senators and congressmen, raising concerns with the Comprehensive Groundwater Strategy Report (DOE, 2003b) and potential changes to existing cleanup agreements;
- A series of articles concerning the RBES Process, Groundwater Strategy Report and DOE's decision-making process for arriving at changes to cleanup agreements.
- A summary of the public comments received at the November 18, 2003 public meetings;
- A series of letters providing comments on the Fernald RBES process from the Agencies and Stakeholders.
- Selected DOE responses to comments and letters received on the RBES Vision and process.

The information contained in the above listed items illustrate the overall public and regulatory attitude toward any changes to the current remedies contained in the site's five RODs.

In a letter to the stakeholders dated January 9, 2004, DOE requested major specific comments by January 20, 2004 and detailed technical comments by March 15, 2004.

Additional comments were received and have been included in Attachment B. Attachment B has been modified to include a comment response section in an attempt to capture the comments received and place them into major groupings or categories and to respond to these comments.

Originally the final version of the RBES Vision Document was to be submitted to Headquarters (HQ) on March 30, 2004. In a memo dated March 18, 2004, Headquarters stressed the importance of public input into the process and asked for a proposed schedule for the sites as to when they would be submitting the next or final version of the document. The FCP replied, they would submit the final version within 2 weeks of formally receiving HQ comments.

On April 6, 2004, the Ohio Field Office Manager, received a memorandum from EM-1 containing general comments, indicating that more detailed HQ comments were following and extending the final submission date to September 1, 2004. Detailed HQ comments were received at the FCP on April 16, 2004. The HQ's comments were reviewed and appropriately incorporated.

Additional HQ comments were received on April 1, 2004. These comments were reviewed and incorporated on June 15, 2004. Minor clarifying comments were received from HQ on June 28, 2004. These comments were addressed and incorporated into the document on July 16, 2004. On July 16, 2004 the FCP was notified of a National Workshop to be held in Chicago on October 5 and 6, 2004. The FCP was notified not to submit the final draft document until after the workshop.

A request was made for DOE-FCP to conduct an informal public meeting on the End-State Document prior to final submittal to HQ. This request was granted and a meeting was held on November 16, 2004.

As of this writing, the FCP anticipates submittal of the Final Draft End-State Document to EM-1 by December 1, 2004.

### **1.3.2 Fernald's Decision-Making Context (Based on Previous Risk-Based Remedy Decisions)**

To assist the DOE and the community with the decisions being contemplated under the CERCLA cleanup process, the Fernald Citizens Task Force (now known as the Fernald Citizen's Advisory Board, or FCAB) was formed in the early 1990s to make recommendations regarding land use objectives, residual risk levels, and to help develop an approach to navigating the technical and political considerations surrounding the need for an on-site disposal alternative. At the time the remedial decisions were being contemplated, there was little dispute over the need to remove, treat, and/or dispose of the source materials from the source OUs themselves. Likewise, there was little dispute over the need to restore the Great Miami Aquifer to full beneficial use. The cleanup of the contaminated soil posed a difficult management problem because of the following: The large volumes and acreages of contaminated material with associated high costs of cleanup; The risk presented by contaminated soil is real but the harm is seldom imminent; The technology for treating soil is often imperfect; and The materials that are removed during cleanup must be disposed somewhere and no place is eager to host them. The complexity of this management problem was noted by the FCAB in their deliberations

The strategy for finalizing sensible soil cleanup levels (and the resultant extent of soil excavation) involved a process of consensus building with local residents, EPA, Ohio EPA and DOE, and in marrying the CERCLA decision process with the deliberations of the FCAB regarding land-use based final cleanup levels. At the time of the FCAB deliberations, the 11-square mile area represented an excavation volume of nearly 10 million cubic yards, if a  $10^{-6}$  risk target (5 ppm total uranium) were to be selected as the land-use based final soil cleanup level. Present-worth cost estimates for such an excavation effort, when coupled with the Great Miami Aquifer restoration remedy, approached more than \$4.3 billion dollars. The FCAB's deliberations and educational efforts with the community helped them understand the

short- and long-term risk evaluations and tradeoffs involved, effective consensus building led to the selection of a 50 ppm total uranium off-site soil cleanup level (corresponding to a  $3.5 \times 10^{-5}$  ILCR and Hazard Index (HI) of 1.0 for non-carcinogenic health effects) as the appropriate risk-based value. When coupled with the on-site disposal decision for contaminated soil and debris, this decision reduced present worth costs from an estimated \$4.3 billion as mentioned above, to a more realistic \$580 million. Equally as important, the decision reduced the area of excavation to approximately 400 acres, down from the potential 11-square miles previously under consideration. It is important to note that the above listed decisions were endorsed by the FCAB, in conjunction with EPA and Ohio EPA.

Also, during the solicitation of community input for the remedy decisions, it became clear that virtually no Stakeholders or members of the public were interested in seeing the on-site area of Fernald returned to an unrestricted residential/farming land use following remediation. From this basis, and on the recommendations of the FCAB, EPA, Ohio EPA, and DOE collectively agreed to adopt what was known as Land Use Objective No. 3 (a restricted, non-farming land-use objective) for the setting of sensible on-site soil cleanup levels. Individual constituent cleanup levels for a designated hypothetical Undeveloped Park receptor were then set at an ILCR of  $10^{-6}$  and a HI of 0.2. These target values, recognizing other non-farming land uses (e.g., commercial, industrial, and developed park) could be possible for the site in the future while meeting the corresponding land use-specific risk range targets ( $1 \times 10^{-4}$  to  $1 \times 10^{-6}$  ILCR and HI=1) considered acceptable by EPA in the National Contingency Plan. These deliberations and the consensus building resulted in the selection of Alternative 3A from the Fernald OU5 Proposed Plan (excavation of contaminated soil and placement in an engineered on-property disposal facility to achieve on-site Undeveloped Park risk-based levels) as the preferred remedy for the site. The final cleanup decision provided a health-protective remedy that is reliable over the long term, yielded the lowest overall short-term risks, and is less costly when compared to the other alternatives (DOE, 1995b). This consensus risk-based decision was then documented in the January 1996 OU5 ROD (DOE, 1996b).

### **1.3.3 Opportunities and Challenges Facing Future RBES Decisions**

As the above background discussion illustrates, the FCAB, in conjunction with local Stakeholders and the Regulatory Agencies, plays a vital role in making the key collaborative Fernald decisions that are risk based and/or final land-use focused. The FCAB also plays a pivotal role in gaining public consensus and educating local public members in the short- and long-term tradeoffs involved in CERCLA remedial decision-making. During recent meetings on Fernald's RBES opportunities, both the FCAB and the Regulatory Agencies strongly pointed out that the risk-based decisions already reached for the Fernald site to arrive at the original cleanup remedies, sensible soil cleanup levels, and land-use preferences have already produced a solid "RBES Vision" for Fernald that, in their mind, requires little further tailoring.

In recognition of this backdrop, it was agreed in concept during the initial dialogue between DOE and its Stakeholders and Regulators that the FCAB would serve as the primary deliberative body for gaining public consensus on acceptable new risk-based initiatives emerging from the RBES Vision. EPA and Ohio EPA (who also sit on the FCAB) would serve as the primary deliberative organizations for determining the regulatory acceptability of the new initiatives, should they require revisions to existing cleanup agreements and/or implementation requirements. Through the collaborative interactions with these primary bodies, the aggressive master list of technically supportable initiatives will be screened for further applicability to arrive at the final shortlist of viable initiatives that can be implemented beneficially given the present status and remaining timetable for the cleanup remedies underway.

Significant ongoing dialogue with the FCAB and the regulatory agencies concerning the RBES deliverables occurred in early October 2003. The RBES policy was an agenda topic at the FCAB's annual retreat, and was the subject of a quarterly FCAB meeting on October 21, 2003. Individual meetings with

local stakeholder groups, such as FRESH, have been held, along with the featuring of the initiatives during monthly Fernald Cleanup Progress Briefings held for the local public. At the October 21, 2003 FCAB meeting, a consensus was reached between DOE and the FCAB regarding the ongoing interactions that will be necessary to move into the shortlisting process for the initiatives. A public meeting on the RBES process was held on November 18, 2003. A general letter to Stakeholders was also issued announcing the November 18, 2003 public meeting and asking for input and participation in the RBES process. Feedback received from the Regulatory Agencies, indicates that they are unwilling to support any of the RBES initiatives contained in this report. Additional discussions are planned in the coming months, particularly pertaining the groundwater scenario as described below. It has been agreed that Fernald would continue to follow the same level of deliberative processes employed during the original CERCLA decision-making (and subsequent ROD changes already in place) in the future consideration of changes to the current plan.

In light of Fernald's decision-making landscape and the RBES interactions already underway, a summary of the master list of technically supportable opportunities that are contained in the RBES Vision, are provided in the bullets below. These opportunities were all identified in the September 2003 timeframe, for inclusion in the Vision.

- Allow use of an area averaging and hot-spot approach for OSDF soil WAC demonstration (just like soil cleanup standards). Currently, a "not to exceed" approach is required by the OU5 ROD (DOE, 1996a).
- Use the Fernald sediment cleanup levels in all streams and ponds on site. Currently, these levels are limited to the Great Miami River and Paddys Run.
- Use the cross-media aquifer protection soil cleanup levels for subsurface soils (below 3 feet) rather than the surface soil cleanup levels.
- Allow Fernald's new outfall line to be cleaned and left in place.
- The D&D concrete debris from select remediation structures that were installed clean will be certified clean and used as clean, hard fill in select deep excavations.
- Discharge OSDF leachate that meets surface water cleanup levels to on-site ponds, rather than requiring the leachate to be automatically treated before discharge.
- The AWWT facility will be shut down, undergo D&D, and be disposed of in the OSDF, along with the underlying, impacted soil, by the Site Closure date of June 30, 2006. The most cost-effective infrastructure to support groundwater remediation post 2006 closure will be identified and installed to replace the AWWT.

All of the above listed opportunities would change Fernald's end-state residual contaminant levels under current cleanup agreements. All of the opportunities can be technically supported under a risk-based decision-making concept. These opportunities are presented in detail in the RBES Vision so that the variances between the opportunities and current cleanup agreements, along with the cost/benefits, can be identified and evaluated by Fernald's decision-making participants.

Outside of the RBES process, ongoing improvements to the remediation processes, which do not change the residual risk level or end-state condition of the site, are constantly being identified, developed, and pursued under the normal CERCLA process with Fernald's Stakeholders and Regulators. This process

has been in place since the RODs were signed and has been successful in shortening the cleanup schedule and reducing costs, while maintaining the short- and long-term level of protectiveness to the environment consistent with the agreements in place. This mature and time-tested process remains in place and will continue to be utilized to review new improvements that are identified throughout the remainder of the cleanup effort.

#### **1.3.4 Lessons Learned Regarding RBES Decision Making – Groundwater-Based Opportunities**

One of the requirements of the 2003 Fernald Closure Contract Modification Number M038 is the need to identify the most cost-effective groundwater infrastructure to remain at the site when the other baseline work elements defining Site Closure are complete at the end of June 2006. Since the full restoration of the Great Miami Aquifer will occur to the same end state sometime after 2006 regardless of the treatment/infrastructure decisions being contemplated under Modification M038, the decisions are technically not a RBES Vision opportunity. Fernald is engaged with the FCAB and the Regulatory Agencies regarding the options for the D&D of groundwater treatment infrastructure in time for the resultant surface and subsurface soil and debris to be placed into the OSDF before that facility permanently closes.

In early October 2003, an internal working draft of DOE's Comprehensive Groundwater Strategy Report was shared with the FCAB, local Stakeholders, and the Regulatory Agencies, outlining a number of major groundwater treatment alternatives for consideration including the regulatory relief that may be necessary from existing cleanup agreements for each alternative in order to achieve the objectives contemplated (DOE, 2003b). Follow-up discussions with Stakeholders were held as part of the December 2, 2003 FCAB meeting. An additional public meeting was held on January 13, 2004 to provide a "toolbox" to Stakeholders to clarify the alternatives outlined in the Groundwater Strategy Report. Excerpts from the "toolbox" are provided in Appendix C.

It was agreed that Fernald would continue to follow the same level of deliberative processes employed to date in the future consideration of any changes in the current plan for groundwater and wastewater treatment, and the possibility of the early D&D of existing water treatment facilities. This agreement was similar to the consensus reached at the October 21, 2003 FCAB meeting regarding RBES Vision opportunities.

At a February 18, 2004 FCAB Groundwater "tool box" meeting, DOE presented the concepts behind a smaller replacement water treatment facility to replace the AWWT Facility for use for the long term. As a result of US and Ohio EPA comments related to the smaller system, the decision was made to add an additional 600 gpm to the system to address long-term uncertainties in the water treatment needs.

On March 10, 2004, a fact sheet was sent to the regulators and key stakeholders proposing to modify the AWWT facility to retain 1800 gpm of the existing 2600 gpm capacity. This would allow early D&D of 90% of the existing AWWT footprint (soil and debris) and placement into the on-site disposal facility. This alternate treatment initiative would not require formal changes to the OU5 ROD or associated regulatory permits. In a letter dated March 10, 2004, the FCAB endorsed (with comments) the proposal to replace the existing AWWT with a smaller facility.

In a letter dated April 30, 2004, DOE-FCP responded to the FCAB letter of March 10, 2004, addressing the path forward for obtaining regulatory concerns related to the groundwater initiative.

On May 5, 2004, DOE-FCP transmitted a letter to U.S. EPA and Ohio EPA documenting discussions and agreements on the path forward and technical implementation of “conversion” of the AWWT. On May 17, 2004 and June 3, 2004, the U.S. EPA and the Ohio EPA respectively, sent letters to the DOE-FCP approving the conversion of the AWWT. On June 1, 2004 a draft Fact Sheet to the Operable Unit 5 ROD was submitted to the Agencies to formalize this change. The “Fact Sheet” was finalized and transmitted to the Agencies on July 20, 2004. A postcard announcing the availability of the Fact Sheet was transmitted to 884 people on July 23, 2004. The Fact Sheet was discussed at the August 3, 2004 full meeting of the FCAB.



## **2.0 REGIONAL CONTEXT RISK-BASED END STATE DESCRIPTION**

### **2.1 PHYSICAL AND SURFACE INTERFACE**

The FCP site is located in southwestern Ohio in Hamilton and Butler counties. The topography in southwestern Ohio includes gently rolling uplands with steep hillsides along the major streams such as the Great Miami River and Paddys Run. Agricultural fields, with interspersed woodlots and riparian corridors, dominate the tillable areas around the FCP. Development has increased in the area around the FCP in the last decade converting agricultural fields to residential use. Although the trend of increased residential development is expected to continue, the counties of Hamilton and Butler do not anticipate any major changes in the regional topography (See Figure 2.1b).

The land in Hamilton and Butler counties within the region of the FCP site is privately owned for agricultural, residential, and commercial use. According to the Butler and Hamilton Counties projected future land use, the land will remain privately owned for agricultural, residential, and commercial use. The FCP site will remain under federal ownership. The OSDF and buffer zone will remain DOE property in perpetuity to allow DOE to continuously monitor and maintain the facility. In the event that DOE transfers management of the OSDF to another federal government entity, the appropriate restrictions and limitations will be communicated and implemented (e.g., deed restrictions).

### **2.2 HUMAN AND ECOLOGICAL LAND USE**

The FCP site is located near the communities of Shandon (northwest), Ross (northeast), New Baltimore (southeast), Fernald (south), and New Haven (southwest) and lies on the boundary between Hamilton and Butler counties (See Figure 2.2b).

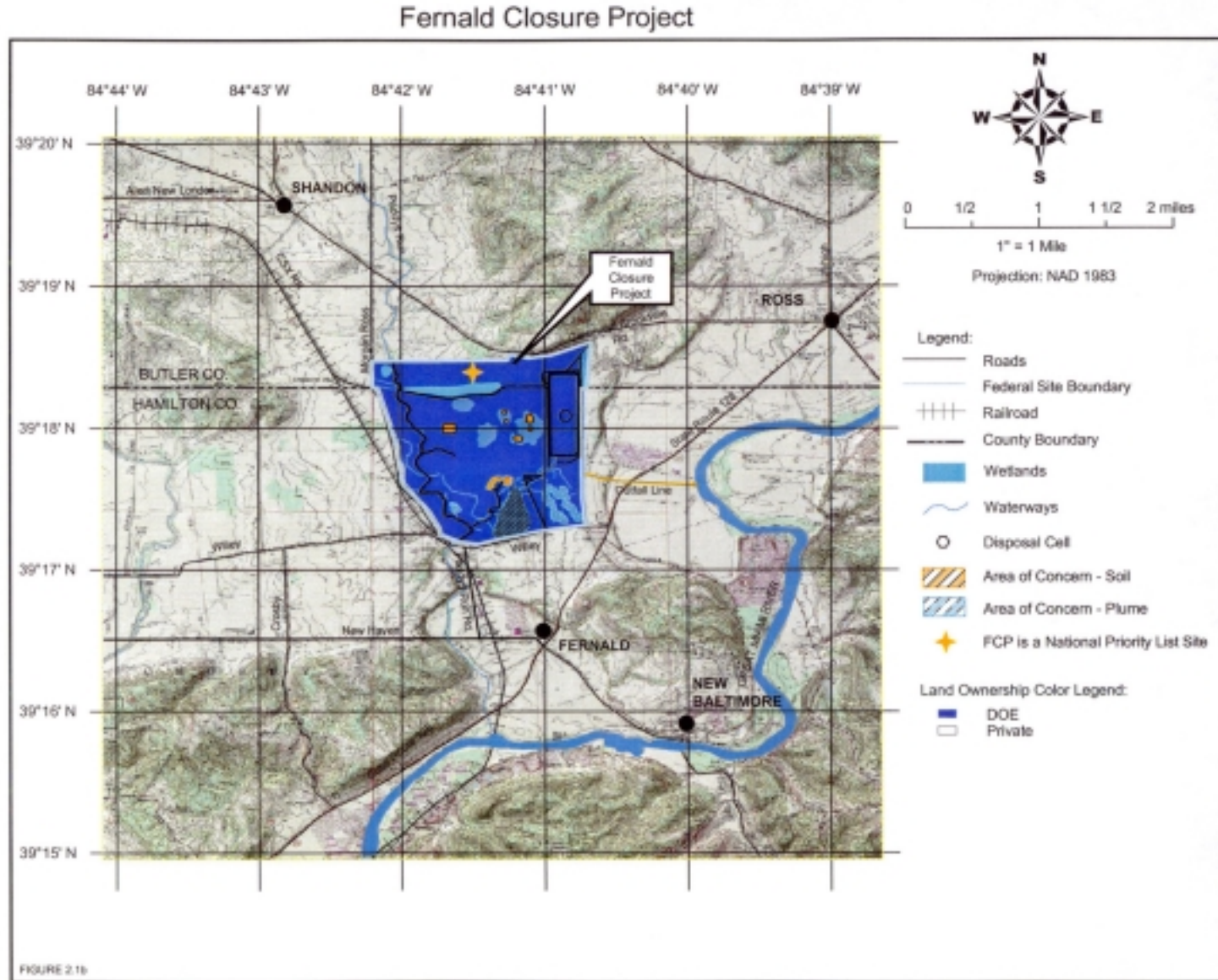
The land cover of Hamilton and Butler Counties is mainly agricultural. Land around the communities of Shandon, Ross, and New Baltimore is residential. There are two areas of commercial/industrial land cover: one southwest of Shandon and one along the upper west boundary of the FCP site. Although the land of the FCP site used to be agricultural, activities conducted to support the production mission have significantly altered the topography; therefore the land cover is barren. The barren land east of the site is a gravel excavation operation.

Based on the 1990 census, the 5-mile radius around the FCP site contains an estimated 22,900 people while the eight-county Cincinnati consolidated metropolitan statistical area has a population of more than 1.7 million and a labor force of more than 920,000. Scattered residences and several villages are located near the FCP property. Residential units are concentrated in Ross to the northeast, in a trailer park to the east, and in New Baltimore to the southeast.

Within 5 miles there are six schools that enroll 3316 students, two day care centers that enroll about 160 children, and residences that house about 8140 children. The Ross Local Schools District is constructing a new secondary school to support the increase in attendance due to recent development in the school district.

The area around the FCP remains predominantly open and agricultural and the site itself was farmed before construction of production facilities in 1951. Residences, many of them farmsteads, are scattered around the area and a dairy farm is located just outside the southeast corner of the FCP boundary. Due to a long history of intensive agriculture, there is very little nearby land where a natural environment remains intact. Miami-Whitewater Forest operated by Hamilton County Park District contains more than 2,000 acres of woodlots and former agricultural areas that have been converted to prairie and wetlands and is located approximately 3 miles West of the FCP.

Commercial activity is generally restricted to the village of Ross, approximately 3 miles to the northeast. Industrial use is concentrated along State Route 128, in a small industrial park south of the FCP property, in the village of Fernald, and along the site's western boundary.



*Figure 2.1b. Regional physical and surface interface – RBES.*

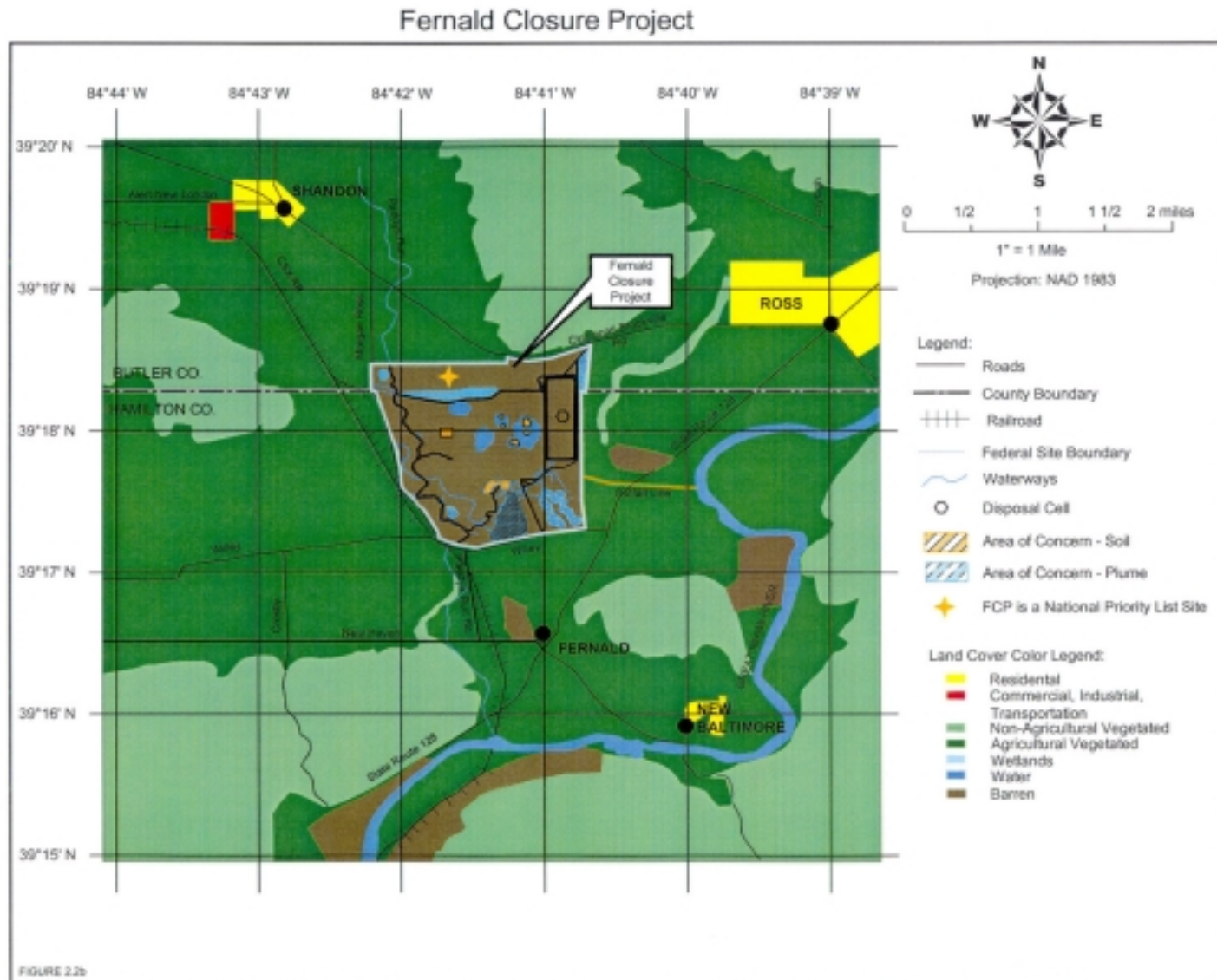


Figure 2.2b. Regional human and ecological land use – RBES.

The Great Miami Aquifer is designated as the sole drinking water source (under Section 1424(e) of the Safe Drinking Water Act) for over 600,000 people in Southwestern Ohio, providing 100 percent and 48 percent of the potable water for Hamilton and Butler counties, respectively. Some residents within a 5-mile radius of Fernald rely on private wells, cisterns or bottled water for potable water. FCP area farms use wells to irrigate their fields and farmers along the Great Miami River irrigate with river water.

The majority of the FCP lies within Hamilton County, Ohio. Hamilton County was consulted during development of the Final Land Use Environmental Assessment (EA) for the FCP (DOE, 1999b). The Hamilton County Planning Commission has a conceptual development plan for the area surrounding the FCP that projects primarily commercial/industrial development immediately adjacent to the western portion of the FCP. The properties immediately to the East and South of the FCP are identified for continued residential and agricultural use. The Northern portion of the FCP lies in Butler County, Ohio and consultation occurred with Butler County Planning Commission. The property immediately adjacent to the Northern boundary of the FCP is primarily residential and agricultural and is expected to remain in those land uses.

### **3.0 SITE SPECIFIC RISK-BASED END STATE DESCRIPTION**

#### **3.1 PHYSICAL AND SURFACE INTERFACE**

The FCP site is a 1050-acre facility located in southwestern Ohio, about 18 miles northwest of downtown Cincinnati. The facility is located just north of the small rural community of Fernald and lies on the boundary between Hamilton and Butler counties (See Figure 3.1b).

The FCP currently has approximately 400 of the 1050 acres disturbed due to ongoing remediation work. The Former Production Area, Waste Pit Area, Silos Area, OSDF, and Borrow Area are all in a condition of surface disturbance due to soil excavation, disposal or other construction activities. Infrastructure for the Aquifer Restoration Project (e.g., wells, pump houses) is visible in much of the southern perimeter area of the FCP and off-site areas south of the FCP. The majority of the perimeter areas of the FCP are either former pastures, woodlots or stream corridors that have been restored to the early stages of prairie or woodlot or are in the process of being restored to natural areas.

The RBES of the FCP site will be an Undeveloped Park with limited public access for educational purposes. The FCP site will remain under federal ownership. The OSDF and buffer zone will remain DOE property in perpetuity to allow DOE to continuously monitor and maintain the facility. In the event that DOE transfers management of the OSDF to another federal government entity, the appropriate restrictions and limitations will be communicated and implemented (e.g., deed restrictions).

The land immediately adjacent to the FCP site is privately owned for agricultural, residential, and commercial use. According to the Butler and Hamilton Counties projected future land use, the land will remain privately owned for agricultural, residential, and commercial use. All of the land that borders the southern perimeter of the FCP and almost half of the land that borders the eastern perimeter of the FCP is owned and farmed by one family. Indications are that this property will remain as agricultural land with the currently family continuing to live on and farm the property. The remainder of the property that borders the eastern perimeter of the FCP is privately owned, agricultural land and will likely remain as such. The majority of the land that borders that northern perimeter of the FCP is owned by a single land-owner who lives and farms the property. There is no indication at this time that this property will be sold or developed. The western perimeter of the FCP is bordered by a series of private residences, businesses or agricultural land. One private residence is being sold as commercial property at this time. There is the potential that additional private residences or agricultural land will be developed over the next decade.

Access to the site will be available by the North and South Access Roads. The North Access Road will be accessible by State Route 126 that runs along the northeast corner of the FCP site. The South Access Road will be accessible by Willey Road that runs along the southern property boundary and intersects State Route 128 to the east of the site. The access road around the OSDF will be left to provide access for inspection and maintenance during Legacy Management.

Activities conducted to support the original site mission have significantly altered the topography of the FCP site. The end state of the site will be mainly forest (395 acres) and prairie (327 acres). The OSDF and buffer zone will cover approximately 75 acres, wetlands will cover approximately 81 acres, and lakes will cover approximately 60.4 acres.

Paddys Run flows from north to south along the FCP's western boundary and empties into the Great Miami River approximately 1.5 miles south of the site. Paddys Run is an ungaged, intermittent stream that flows primarily between January and May with an estimated discharge of 0.2 to 4 cubic feet per second (cfs).



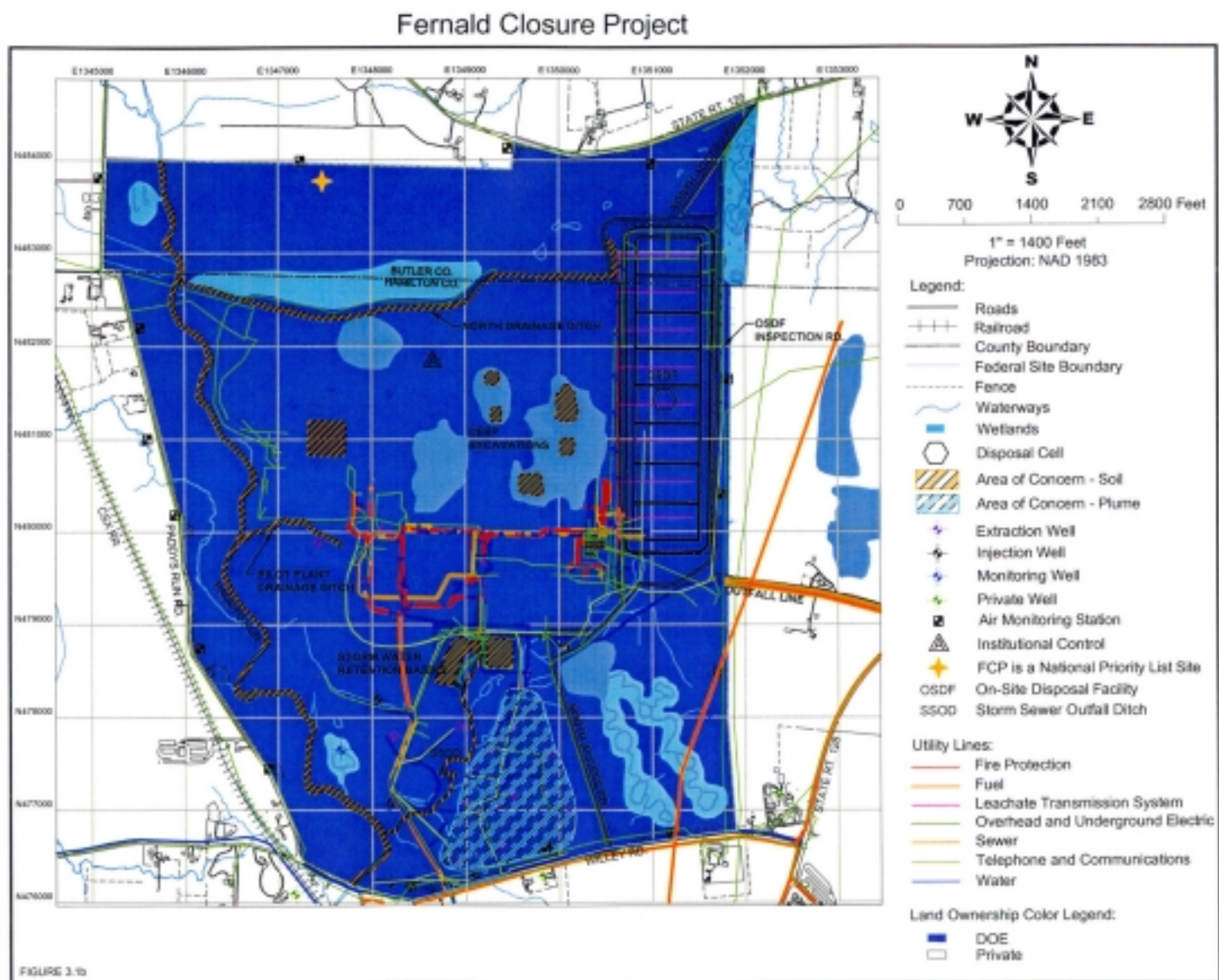


Figure 3.1b. Site physical and surface interface –RBES.

### **3.2 HUMAN AND ECOLOGICAL LAND USE**

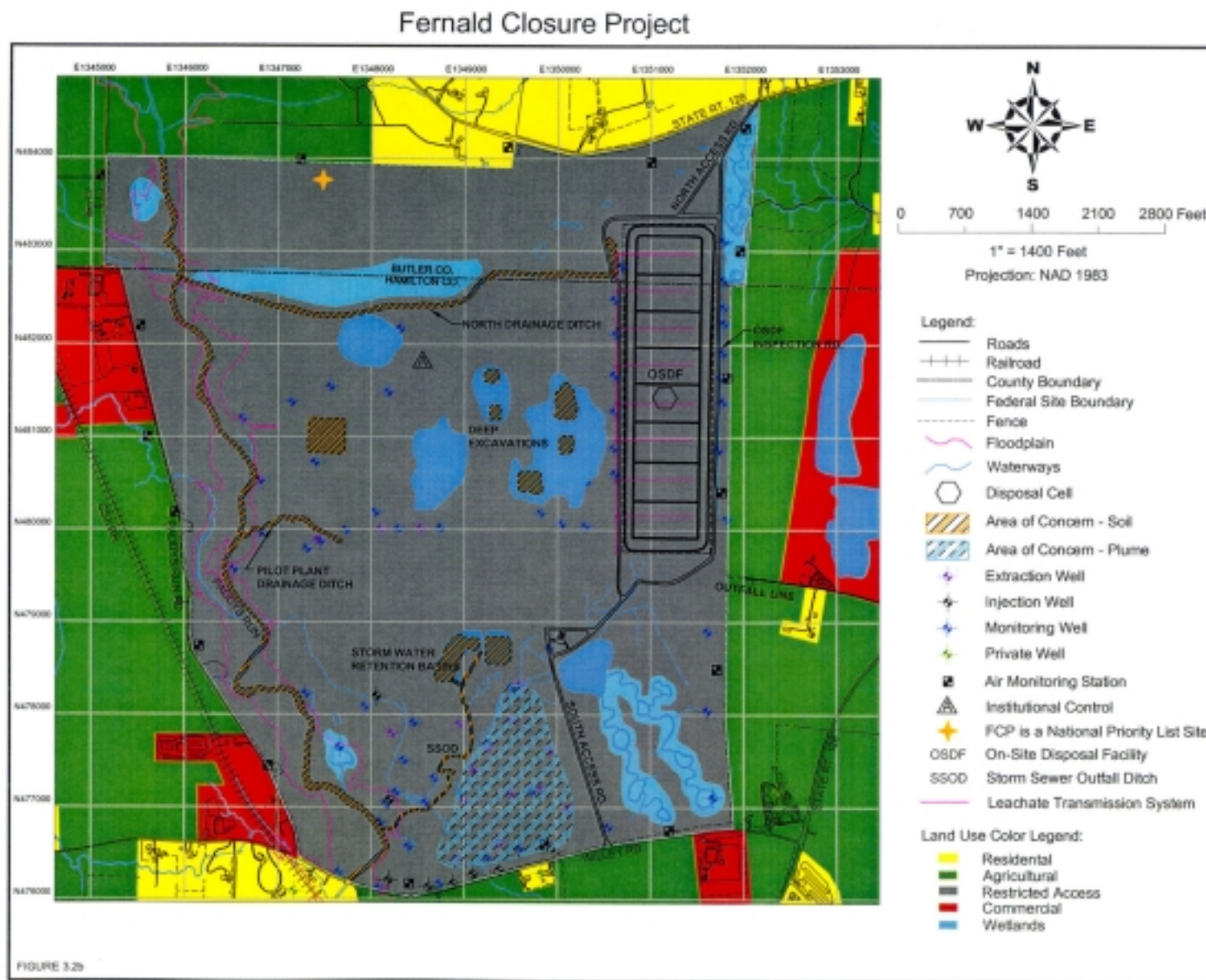
Risk to ecological receptors is being considered as part of the remediation of the FCP. Ecological risks were first addressed through the Sitewide Ecological Risk Assessment (SERA), which was conducted as part of the Operable Unit (OU) 5 Remedial Investigation (DOE, 1995a). The SERA assessed both radiological and non-radiological risks. Dose estimates to receptor organisms demonstrated that there was no ecological risk due to effects from radiation at the Fernald site. For non-radiological risks, contaminant concentrations were compared to media-specific benchmark toxicity values (BTVs). BTVs are not cleanup levels, but rather literature-derived concentrations that are considered protective of ecological receptors. Based on this review, several contaminants warranted further investigation. Further studies were deferred until human health-driven remedial activities were better defined.

Non-radiological ecological risks were subsequently re-evaluated as part of the Sitewide Excavation Plan (SEP). Updated site soil data, background concentrations, human health Final Remediation Levels (FRLs), and remediation footprints were again compared to BTVs. These exercises revealed that remedial activities should address most potential risks to ecological receptors. However, several constituents that exceed BTVs may remain following soil excavation. In these instances, constituents of ecological concern (COECs) have been included as part of the soil certification process. Certification data are compared to corresponding BTVs in order to determine if additional investigation is necessary. To date, remedial activities have addressed all ecological concerns, as no certification data have exceeded soil BTVs.

Several surface water and sediment BTV exceedances were documented on and off property in the SERA. Like soil, these potential risks were re-evaluated as part of the SEP. Surface water would include both on-property locations such as Paddys Run and the Great Miami River off-property. Surface water and sediment BTVs were compared against background concentrations and human health FRLs. Again, like soil, this process revealed that human health-driven remedial activities would address the majority of potential risks to ecological receptors. Remaining COECs were included in the Integrated Environmental Monitoring Plan (IEMP) surface water and sediment sampling program. Since its inception, IEMP surface water sampling has resulted in only a few sporadic BTV exceedances. DOE has since gained approval to eliminate most BTV-driven surface water sampling, although data collected for other purposes will continue to be reviewed to ensure protectiveness of ecological receptors. Sediment COECs will be handled similar to the approach for soil COECs, as they will be included in the certification sampling program following stream corridor remediation efforts.

The SEP evaluation also investigated the potential for post-remediation soil concentrations to contaminate surface water and sediment. Soil COECs were evaluated using the site Surface Water Flow and Infiltration Model. Maximum anticipated post-excavation soil concentrations were established for each drainage sub-basin recognized by the model. When a soil concentration was not available, background concentrations were used. The results of this effort revealed that no cross media impacts would be a concern.

During the solicitation of community input for the remedy decisions, it became clear that virtually no Stakeholders or members of the public were interested in seeing the on-site area of Fernald returned to an unrestricted residential/farming land use following remediation. Therefore, the final RBES land use of the FCP site will be an Undeveloped Park with limited public access for educational purposes with the goal to educate the public about regional environmental, cultural, historical, and ecological issues (See Figure 3.2b). Approximately 900 acres of the site's ecological natural resources will be restored. The restored habitat types will include upland forest, riparian forest, tall grass prairie, wetlands, and open water. Wetlands cover approximately 81 acres of the site. Deep excavations in the former production



*Figure 3.2b. Site human and ecological land use – RBES.*



area will be converted to ponds. Restoration of the site will begin with grading for stability, erosion control, and to establish proper drainage patterns. The revegetation of the site will occur through the installation of native species of saplings, shrubs, or seedlings in designated areas. Other areas of the site will be seeded using native prairie grasses. The Paddys Run corridor represents excellent habitat for the federally endangered Indiana bat and the state threatened Sloan's crayfish inhabits portions of the creek. The riparian corridor along Paddys Run will be enhanced through the Restoration efforts described below.

The FCP site is situated over the Great Miami Aquifer, which is a sole-source aquifer that generally flows from west to east, with a component of the flow directed towards the south. Approximately 179 acres of on-site and off-site portions of the Great Miami Aquifer have been contaminated by FCP site mission activities. The contaminated groundwater will be extracted, treated/processed, blended with untreated storm water and remediation wastewater, and discharged to the Great Miami River as necessary to restore the Great Miami Aquifer to full beneficial use.

### **3.3 SITE CONTEXT LEGAL OWNERSHIP**

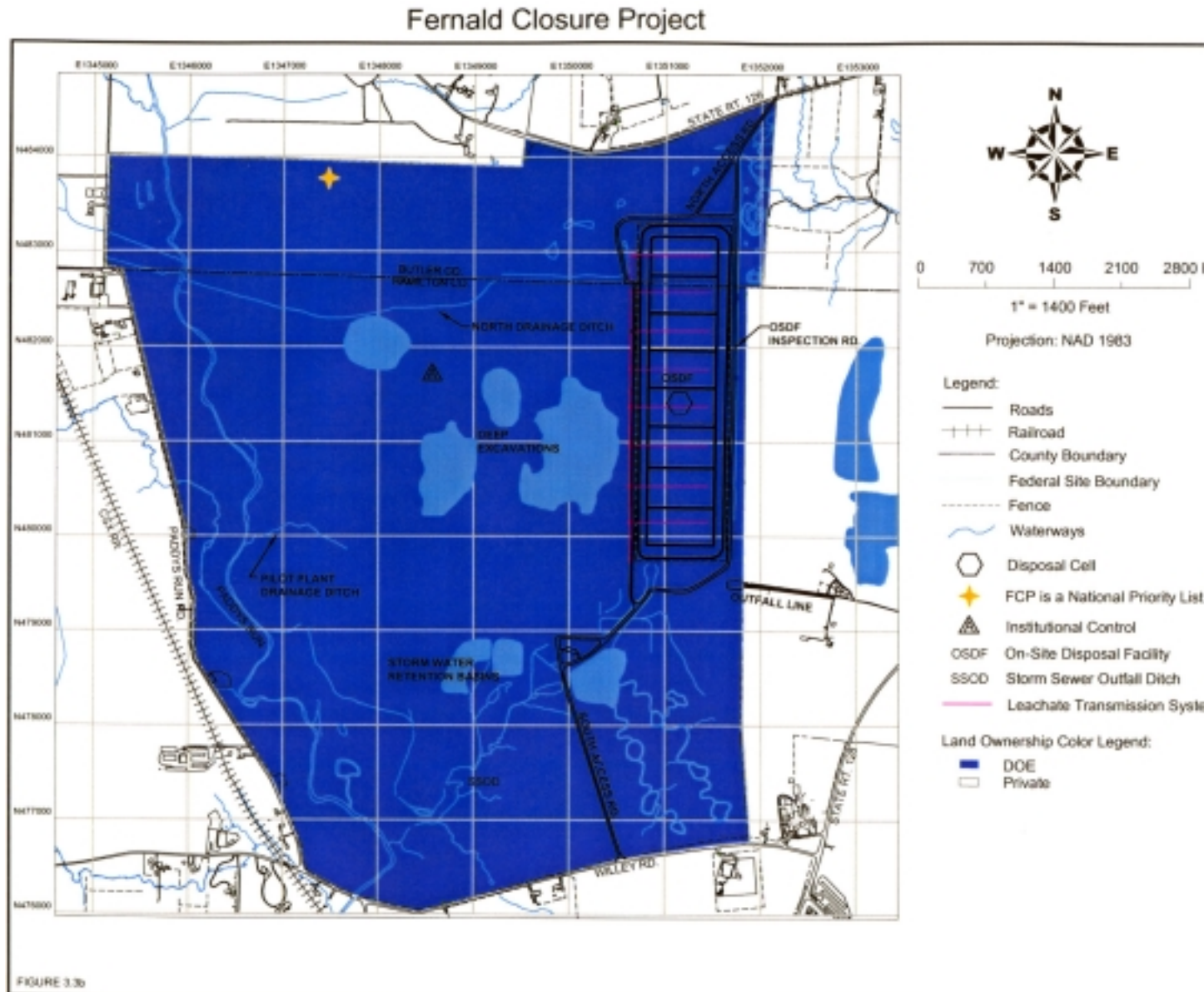
The FCP site will remain under federal ownership with limited public access for educational purposes. The OSDF and buffer zone will remain DOE property in perpetuity to allow DOE to continuously monitor and maintain the facility. In the event that DOE transfers management of the OSDF to another federal government entity, the appropriate restrictions and limitations will be communicated and implemented (e.g., deed restrictions).

The land immediately adjacent to the FCP site is privately owned for agricultural, residential, and commercial use. According to the Butler and Hamilton Counties projected future land use, the land will remain privately owned for agricultural, residential, and commercial use (See Figure 3.3b).

### **3.4 SITE CONTEXT DEMOGRAPHICS**

The final land use of the FCP site will be an Undeveloped Park with limited public access; therefore, there will be no residential use of the site.

The land immediately adjacent to the site is sparsely populated and primarily used for agricultural and commercial purposes. The population density around the FCP site is projected to be less than 10 people per square mile (See Figure 3.4b).



*Figure 3.3b. Site legal ownership – RBES.*

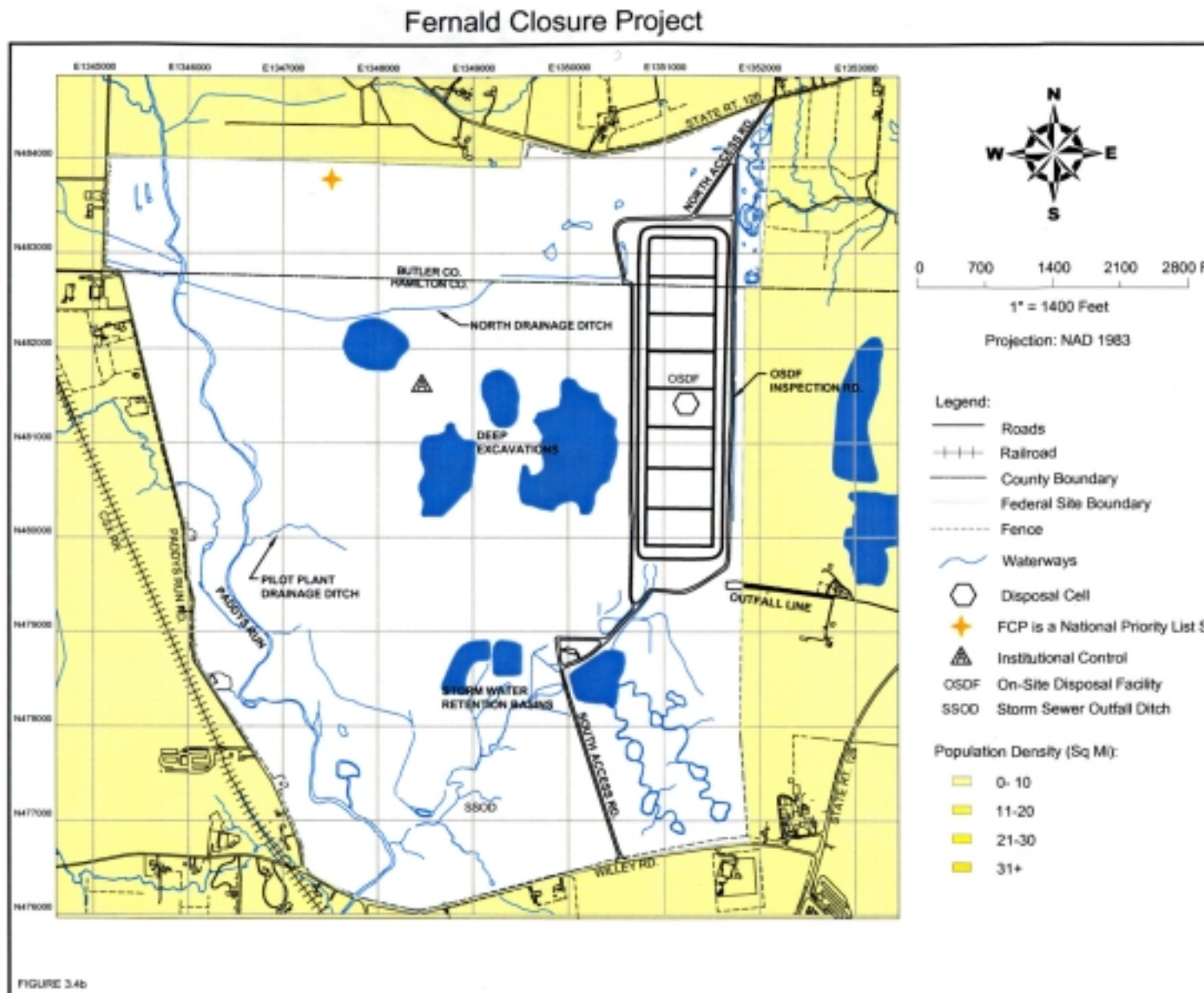


Figure 3.4b. Site context demographics map – RBES.

## **4.0 HAZARD SPECIFIC DISCUSSION**

Four hazard areas of concern have been identified for the FCP site (See Figure 4.0b). These hazards are components of the RBES Vision that vary from the current agreements. The selected remedial strategies for the hazards are designed to be protective of human health and the environment.

The following sections describe the hazard areas and the selected remedial strategies in detail. In addition, maps, CSM, and narratives have been developed to depict each of the hazard areas. **(Please Note: The CSM development process outlined in the RBES Guidance indicates that for a given hazard all possible exposure mechanisms and receptors be depicted on the CSM even if the barrier or intervention that has/will be implemented will limit or eliminate the exposure mechanism or risk to the receptor.)**

### **4.1 HAZARD AREA 1 – ON-SITE DISPOSAL FACILITY**

#### **Background**

Through Fernald's five RODs, it was decided that the site's smaller volume of more highly contaminated material will be disposed off site and the larger volume of material with low levels of contamination that can be safely contained will be disposed on site. The OSDF is a result of this "balanced approach" to waste management at Fernald. Excavated soil and debris will be disposed in the OSDF, or if it does not meet the on-site WAC, at an off-site disposal facility.

The OSDF WAC are derived from the FEMP RODs and from the OSDF remedial design requirements (for physical WAC and prohibited items). Although there are WAC concentrations for individual constituents, the WAC for total Uranium at 1,030 ppm is commonly cited since it is the predominant contaminant at the site and will drive most soil excavation (DOE, 1998). The WAC has been developed so that the OSDF will be protective at a risk level of  $1 \times 10^{-7}$  to an end-user of the FCP.

Combined with waste streams from other site remediation activities, a total of 2.5 million cubic yards of soil and debris will be placed in the OSDF. Approximately 85% of the material destined for the OSDF will be soil and soil-like material and the remaining 15% will be debris from the demolition of site buildings. In accordance with Fernald's RODs, the OSDF will only accept wastes from the Fernald Site. The primary material types destined for the OSDF include all contaminated in-place soil and soil stockpiles; the waste materials present in the South Field, Active and Inactive Flyash Piles, the Lime Sludge Ponds, and the Solid Waste Landfill; and the debris resulting from sitewide facility decontamination and dismantlement (D&D) efforts.

#### **RBES**

The OSDF will be an eight-cell, 75-acre, fenced facility left on the FCP site after site closure (See Figure 4.1b1). The OSDF will be capped with an engineered cover. The liner will have leak detection and leachate collection and transmission systems. A buffer zone and perimeter fence will be established around the disposal facility. The OSDF and buffer zone will remain DOE property in perpetuity in order to allow DOE to continue maintenance and monitoring of the facility. In the event that DOE transfers management of the OSDF to another federal government entity, the appropriate restrictions and limitations will be communicated and implemented (e.g., deed restrictions). The OSDF fence will be maintained by DOE in perpetuity.

The OSDF WAC will be applied to materials with the consideration of the average WAC resulting from mixing within each cell. This practice was the original intent and basis of the WAC. The WAC of the OSDF will be applied by using contaminant-of-concern-specific average concentration within each cell; therefore, materials acceptance for disposal within the OSDF would be based on the overall average concentrations of contaminants within the cell meeting WAC instead of the not to exceed limits. The change in the application of the WAC will result in the OSDF being protective at a risk level of  $1 \times 10^{-5}$  which will continue to be fully protective of human health and the environment (See Figure 4.1b2).



# Fernald Closure Project

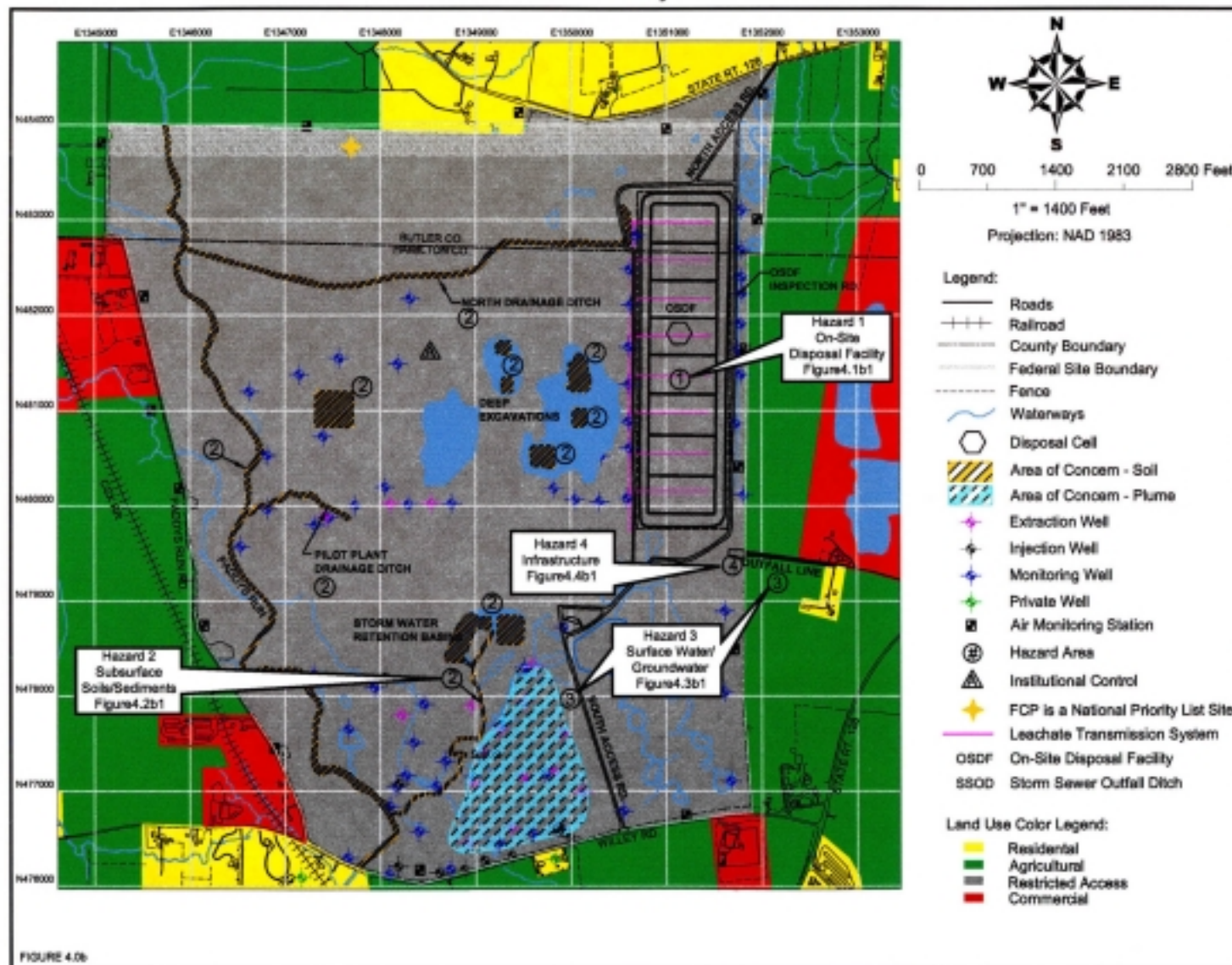


Figure 4.0b. Site wide hazard map – RBES.

# Fernald Closure Project

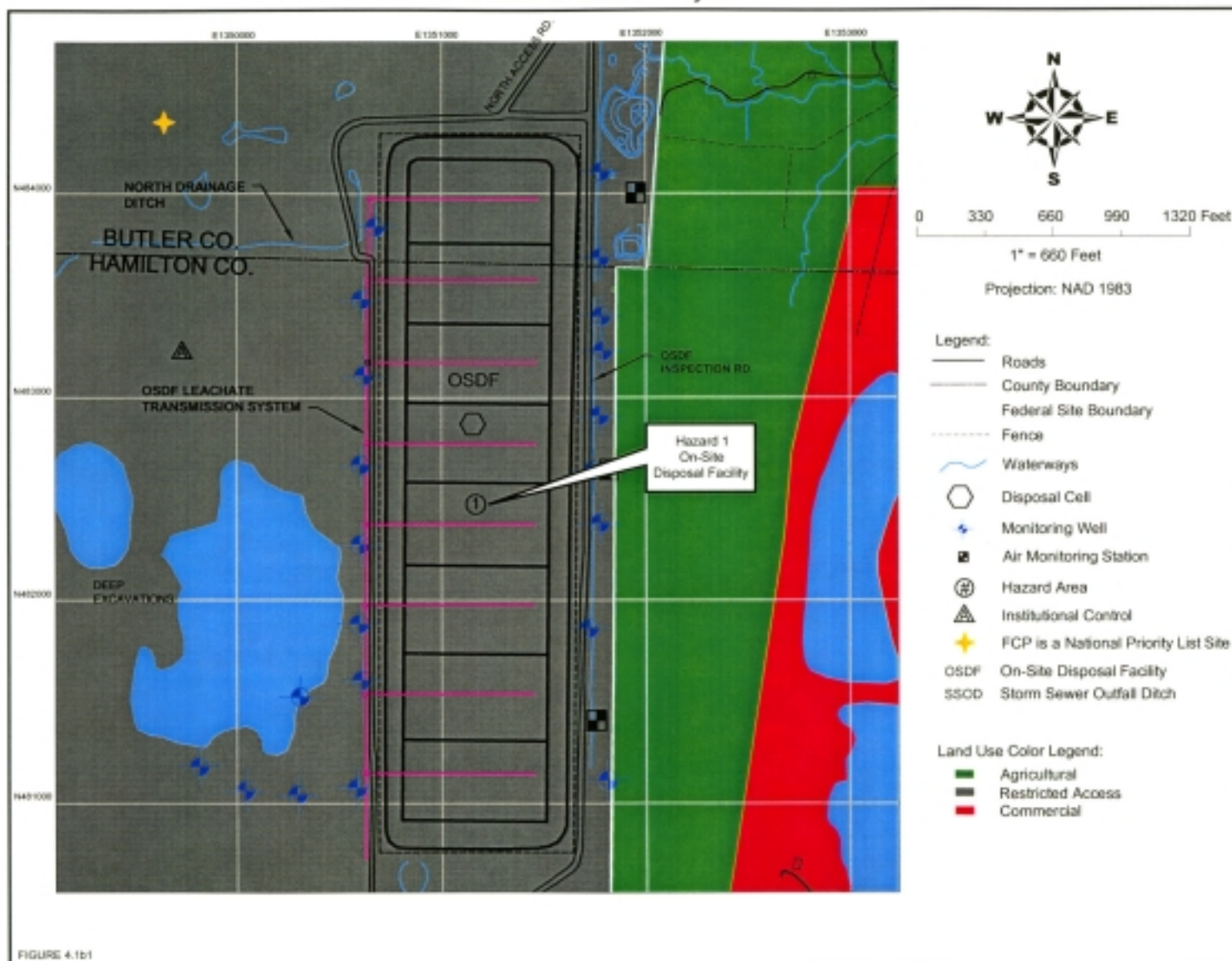
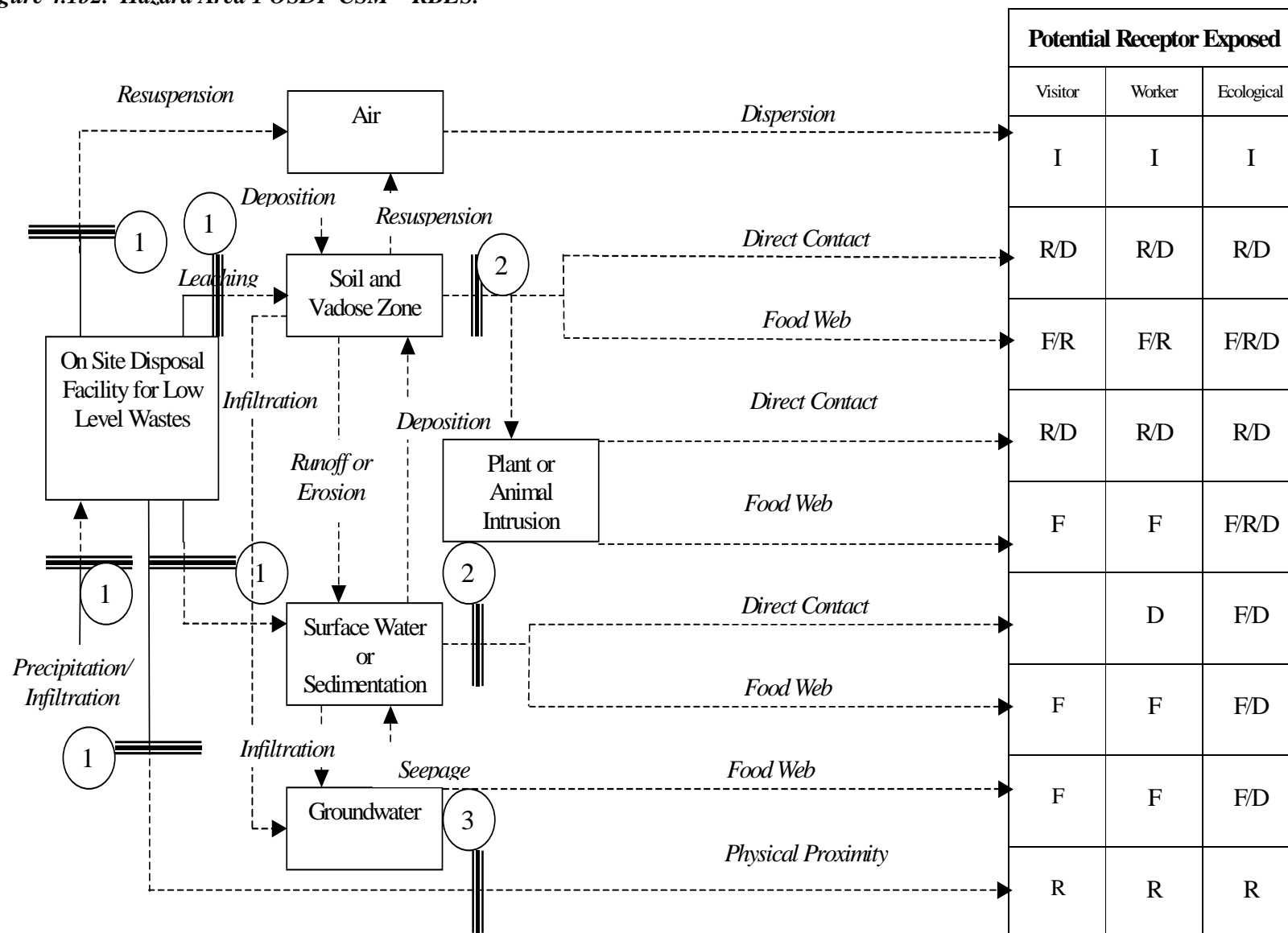
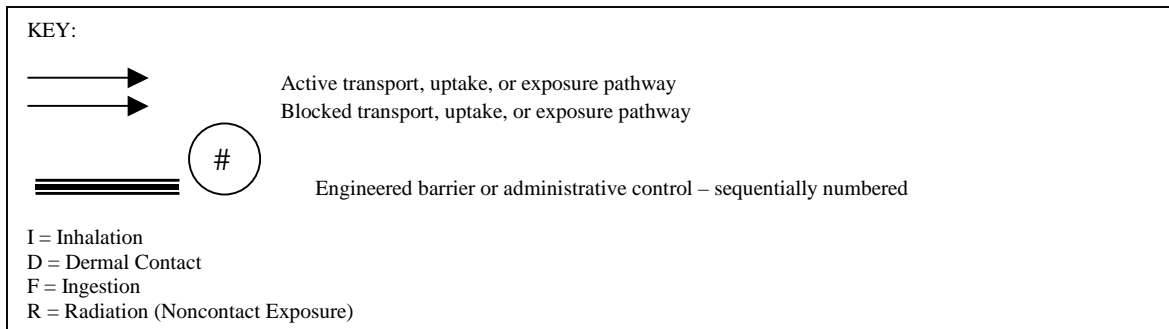


Figure 4.1b1. Hazard Area 1 OSDF map – RBES.

Figure 4.1b2. Hazard Area 1 OSDF CSM – RBES.





### Narrative – Potential Release Mechanisms

This is a simplified conceptual model of potential environmental release mechanisms and exposure pathways for the OSDF containing soil, debris, concrete, metal with a high volume but low content of uranium, metals, and/or other long lasting contaminants. While no release to the environment is assumed, this model considers potential release and exposure pathways.

The potential release mechanisms to the environment are (a) resuspension of contaminated particulate matter, (b) surface runoff, (c) leakage or leaching to subsurface soils from the facility, and (d) rupture of cap from settlement, plant intrusion, animal burrowing or erosion. Besides release through primary mechanisms, the contaminants introduced into the environment are likely to flow between different environmental media such as air, surface soil, surface water and groundwater due to interconnecting mechanisms such as runoff, deposition, infiltration, etc.

Based on these complex interconnecting transport mechanisms, potential human exposure mechanisms are: ingestion of plants grown using contaminated water; consumption of possibly contaminated fish and wildlife; direct contact with contaminated soils; possibly inhalation of resuspended particulate matter; and physical proximity to gamma emitting radionuclides. In addition to exposure pathways associated with environmental releases, direct exposure due to inadvertent intrusion is also considered as a significant hazard.

The potential ecological exposure mechanisms are likely to be ingestion of contaminated water, ingestion of plants grown using contaminated water, secondary ingestion of aquatic organisms that uptake contaminants through sediments or water, direct contact with contaminated soils, and inhalation of vapors or suspended particulate matter. There may also be a possibility of direct exposure to gamma emitting radionuclides due to inadvertent intrusion.

### Narrative – RBES Barriers/Interventions

The steps taken to mitigate potential exposures are as follows:

1. The OSDF is constructed with a composite liner and cap of soil and geosynthesis. The liner has leak detection and leachate collection and transmission systems.
2. Periodic inspections and maintenance of the final cover will occur as well as periodic monitoring and maintenance of the leak detection system and groundwater monitoring system to ensure the protection of human health and the environment.
3. A buffer zone and perimeter fence will be established around the OSDF to restrict access to the public. The OSDF and buffer zone property will remain in DOE ownership in perpetuity. In the event that DOE transfers management of the OSDF to another federal government entity, the appropriate restrictions and limitations will be communicated and implemented (e.g., deed restrictions).



All below WAC Resource Conservation and Recovery Act (RCRA) soil and the Silos debris will be disposed of in the OSDF.

The OSDF leachate with an approximate flow rate of 1 gallons per minute (gpm) will be discharged to surface water bodies in the former production area without further treatment as long as all the surface water FRLs are met. Surface water FRLs meet the MCL for drinking water and will have no impact on human or ecological receptors. Directly discharging the OSDF leachate could contribute to an earlier removal of the Advanced Wastewater Treatment Facility.

The 1-gpm flow of leachate will not likely impact the overall ability of the surface water to meet FRLs so implementing the RBES Vision will continue to be fully protective of human health and the environment.

## **4.2 HAZARD AREA 2 – SUBSURFACE SOILS/SEDIMENTS**

### **Background**

Following 37 years of operations, air deposition, and waste disposal activities, Fernald soil and debris became contaminated with radionuclides and chemicals at levels that necessitated remediation. As required by the OU2 and OU5 RODs, contaminated soil above negotiated cleanup levels is being excavated. The site areas requiring excavation cover 400 acres and include the Lime Sludge Ponds, Southern Waste Units, and soil under the Waste Pits and Silos. Surface soil FRLs are being used for the remediation of all soil on the FCP (DOE, 1998). Excavated soils are properly disposed on site in the OSDF if they meet OSDF WAC or at an off-site disposal facility.

Surface soil FRLs were developed considering the potential for the inhalation of soil. The use of surface soil FRLs for streams, ponds and other open water areas is considered very conservative because the inhalation pathway will be eliminated or greatly reduced due to the ongoing presence of water. The use of sediment FRLs was contemplated in the ROD, but their specific application was not defined.

### **RBES**

Sediment FRLs (210 ppm uranium) will be applied to all streams, ponds, and other excavations targeted for future ponds and open water (See Figure 4.2b1). Streams and ponds do not have the same exposure pathways as soil areas, due to water coverage. Sediment FRLs applied to streams and ponds will be protective of human and ecological receptors.

The soil FRL takes into account the inhalation pathway and is therefore lower than the sediment FRL, which assumes no inhalation pathway. The ponds and open water will have permanent water coverage resulting in no change in risk, due to use of the sediment FRLs. Paddys Run does dry up in the late summer months, but controls (e.g., gates or ropes and signs) will be placed at access locations to keep people from utilizing the streambed in unallowable ways (e.g., motorcycles, ATVs).

Cross-Media Preliminary Remediation Goals (CPRGs) will be applied to subsurface soil instead of surface soil FRLs. This will reduce overall excavation of subsurface soils that have no surface exposure pathways. Soils removed during deep excavation of below grade structures will be segregated and used for backfill, as long as soil FRLs or CPRGs are met.

The use of the CPRGs will continue to be fully protective of the Recreational User of the site (See Figure 4.2b2). Any soil that meets CPRGs will be buried, eliminating the exposure pathway to any soil that is above soil FRLs.

# Fernald Closure Project

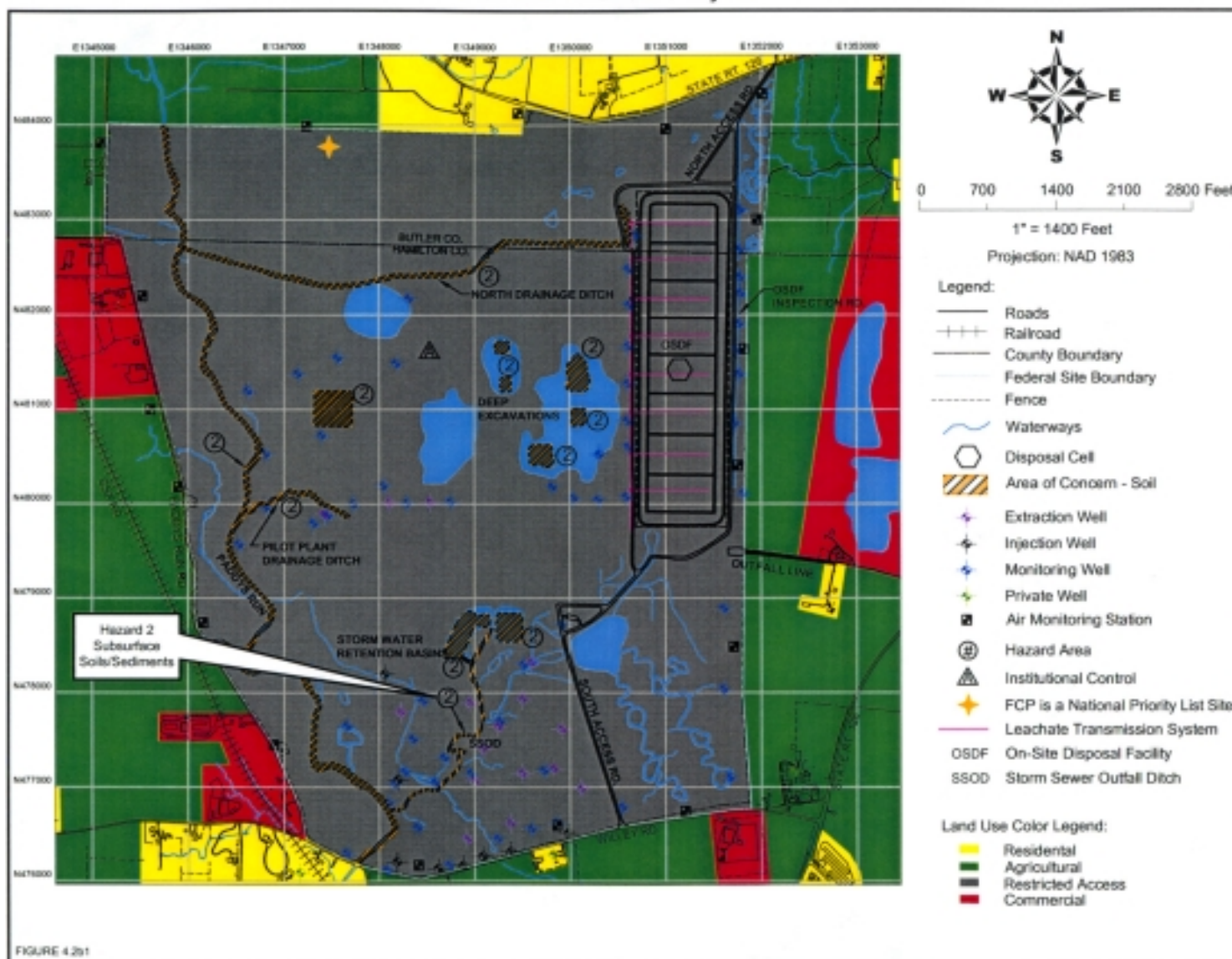
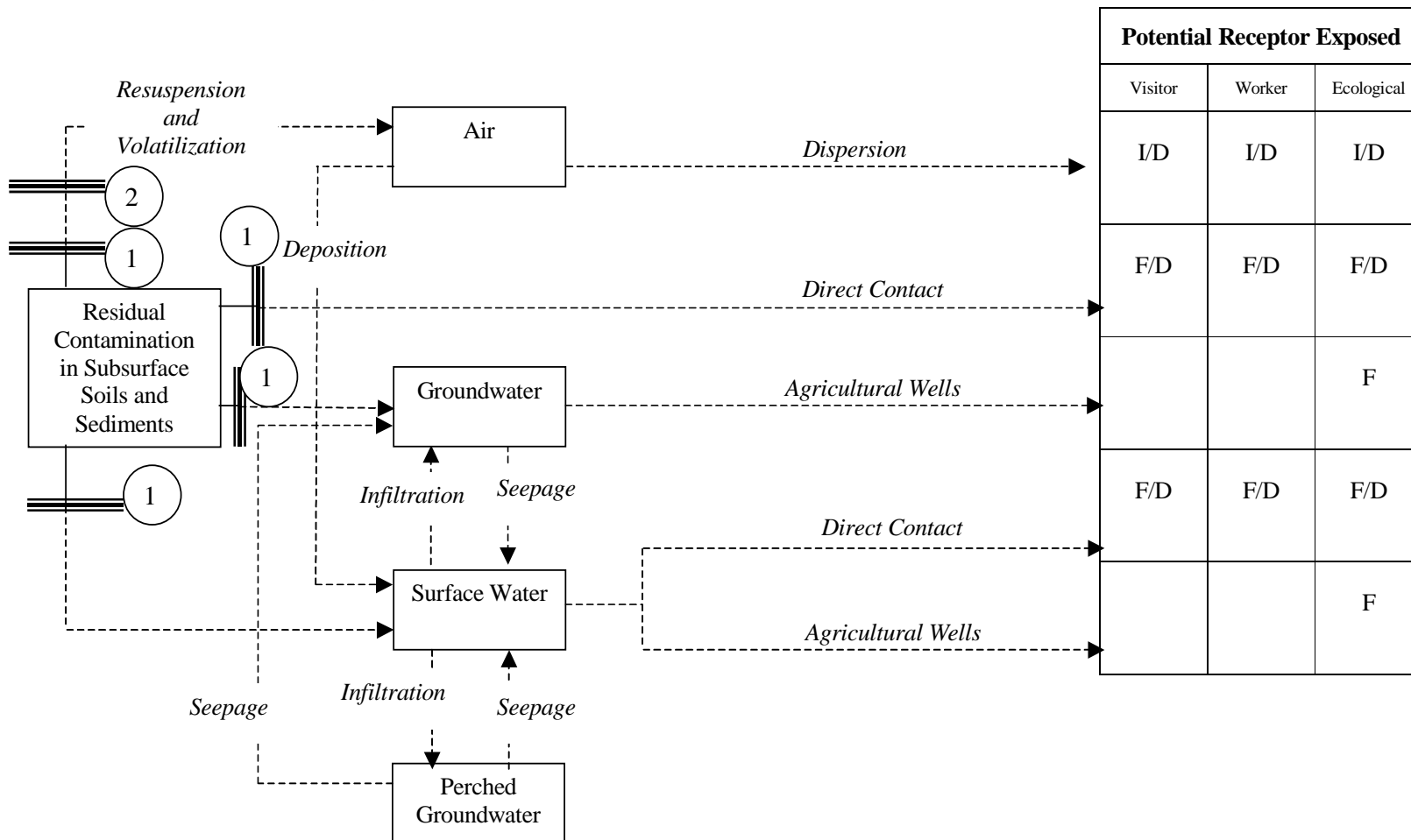
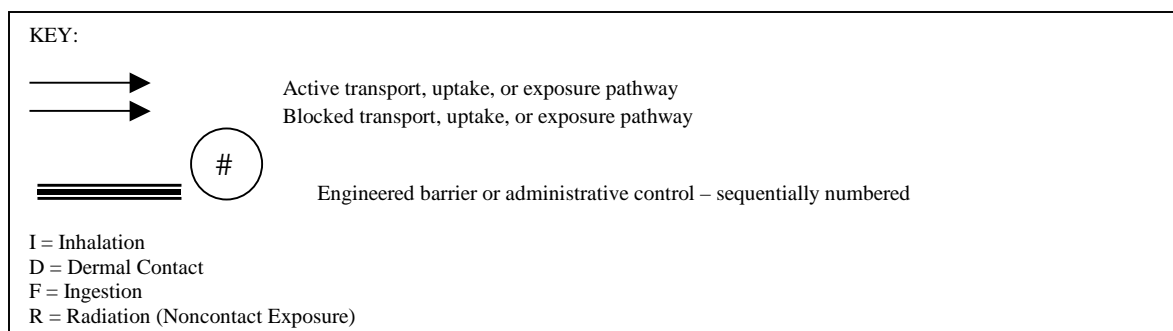


Figure 4.2b1. Hazard Area 2 subsurface soils/sediments map – RBES.

Figure 4.2b2. Hazard Area 2 subsurface soils/sediments CSM – RBES.





### Narrative – Potential Release Mechanisms

This is a simplified conceptual model of the potential environmental transport and exposure pathways for residual contamination at Fernald. While no release to the environment is assumed, this model considers potential release and exposure pathways.

The potential predominant release mechanisms to the environment are (a) resuspension of contaminated particulate matter, (b) volatilization of exposed chemical residuals, (c) erosion and surface runoff to surface water bodies, and (d) leaching of residual contamination into groundwater. No commercial, agricultural, or residential use of water is envisaged. Besides release through primary mechanisms, the contaminants introduced into the environment are likely to flow between different environmental media such as air, surface soil, surface water and groundwater due to interconnecting mechanisms such as runoff, deposition, infiltration, etc.

Based on these interconnecting transport mechanisms, potential human exposure mechanisms are: inhalation of volatilized vapors and resuspended particulate matter, and direct contact with contaminated soil or surface water. Groundskeepers, because they are at the site on a regular basis, would have the highest potential for exposure.

The ecological exposure mechanisms are likely to be inhalation of volatilized vapors and resuspended particulate matter, ingestion of contaminated water, ingestion of plants grown using contaminated water, secondary ingestion of aquatic organisms that uptake contaminants through sediments or water, direct contact with contaminated soils or water.

### Narrative – RBES Barriers/Interventions

The steps taken to mitigate potential exposures are as follows:

1. Soils remaining in streams, ponds, and excavations targeted for future ponds and open water will meet the sediment FRL of 210 ppm uranium. Subsurface soils will meet CPRGs.
2. Sediments and subsurface soils are covered by water and surface soil, respectively; therefore, there is no pathway to air and no risk of exposure by inhalation.
3. Intervention - The FCP site will remain federal government property with limited public access for educational purposes.

### **4.3 HAZARD AREA 3 – SURFACE WATER/GROUNDWATER**

#### **Background**

Fernald is located over the Great Miami Aquifer, one of the largest sources of drinking water in the nation. Following years of uranium production, the aquifer became contaminated with uranium. The levels of uranium in the groundwater are above the drinking water standard of 30 parts per billion (ppb) set by U.S. EPA. Through the Aquifer Restoration subproject, the contaminated portion of the aquifer will be restored by reducing the uranium concentration level to the drinking water standard.

The OU5 ROD documents DOE's commitment to restore the Great Miami Aquifer within 27 years (DOE, 1996b). The remedy is currently being accomplished by pumping the contaminated on-site and off-site groundwater plume from beneath 179 acres, and treatment at the Advanced Wastewater Treatment (AWWT) Facility until the combined, extracted groundwater is less than the ROD established discharge limits for uranium. These limits are 30 ppb on a monthly average and 600 pounds annually in the Site's effluent discharge to the Great Miami River. Although not required by the ROD, DOE is currently utilizing re-injection to enhance the remedy. The AWWT, with a combined groundwater and wastewater treatment capacity of approximately 2500 gpm, is projected to operate beyond the 2006 Closure date under the current state. Waste generated from the D&D of the AWWT and the remediation of the underlying soil will require off-site disposal under current plans.

Current groundwater modeling indicates that the groundwater FRL for uranium (30 ppb) would be achieved site wide by 2023, with the off-property portion of the South Plume falling below the FRL in 2013. The estimated life cycle cost for this alternative is \$167.8 million with the estimated cost through the June 30, 2006 target closure date at \$27.2 million (DOE, 2003b). Appendix C provides additional information regarding the complexities of the surface water/groundwater issues related to both the current state and the RBES remedy.

The Sitewide Ecological Risk Assessment (SERA) (DOE, 1995a) investigated risks to aquatic ecological receptors in the Great Miami River by comparing surface water contaminant concentrations to Benchmark Toxicity Values (BTVs). This effort revealed that several Constituent of Ecological Concerns (COECs) warranted further investigation. The subsequent re-evaluation of ecological risks in the Sitewide Excavation Plan (SEP) concluded that three parameters (barium, cadmium, and silver) should be added to the IEMP surface water sampling program (DOE, 1998). Results of this effort have revealed that of 359 samples, only six BTV exceedances have occurred since 1997. Five of the six exceedances were for cadmium, which has a BTV lower than the Great Miami River background concentration. DOE and USEPA/OEPA subsequently agreed to eliminate most BTV-driven surface water sampling due to the extremely limited number of exceedances. Therefore, surface water COECs in the Great Miami River are not an issue.

#### **RBES**

Full restoration of the aquifer, to meet the uranium drinking water standard of 30 parts per billion (ppb), would occur both on-site and off-site (see Figure 4.3b1). Meeting the drinking water standard will address risk issues related to human and ecological receptors both on-site and off-site (see Figure 4.3b2). The AWWT facility will be modified to retain 1800 gpm of the existing 2600 gpm capacity. This will allow early D&D of 90% of the existing AWWT footprint (soil and debris) and placement into the on-site disposal facility. This alternate treatment would not require formal changes to the OU 5 ROD or associated regulatory permits. Discharge limits would be accomplished primarily by adjusting groundwater pumping rates when necessary and terminating groundwater re-injection without significantly delaying the aquifer restoration time frame. Based on the observed progress of aquifer restoration, it is expected that no significant change in the groundwater remediation schedule would occur under the conceptual RBES remedy.

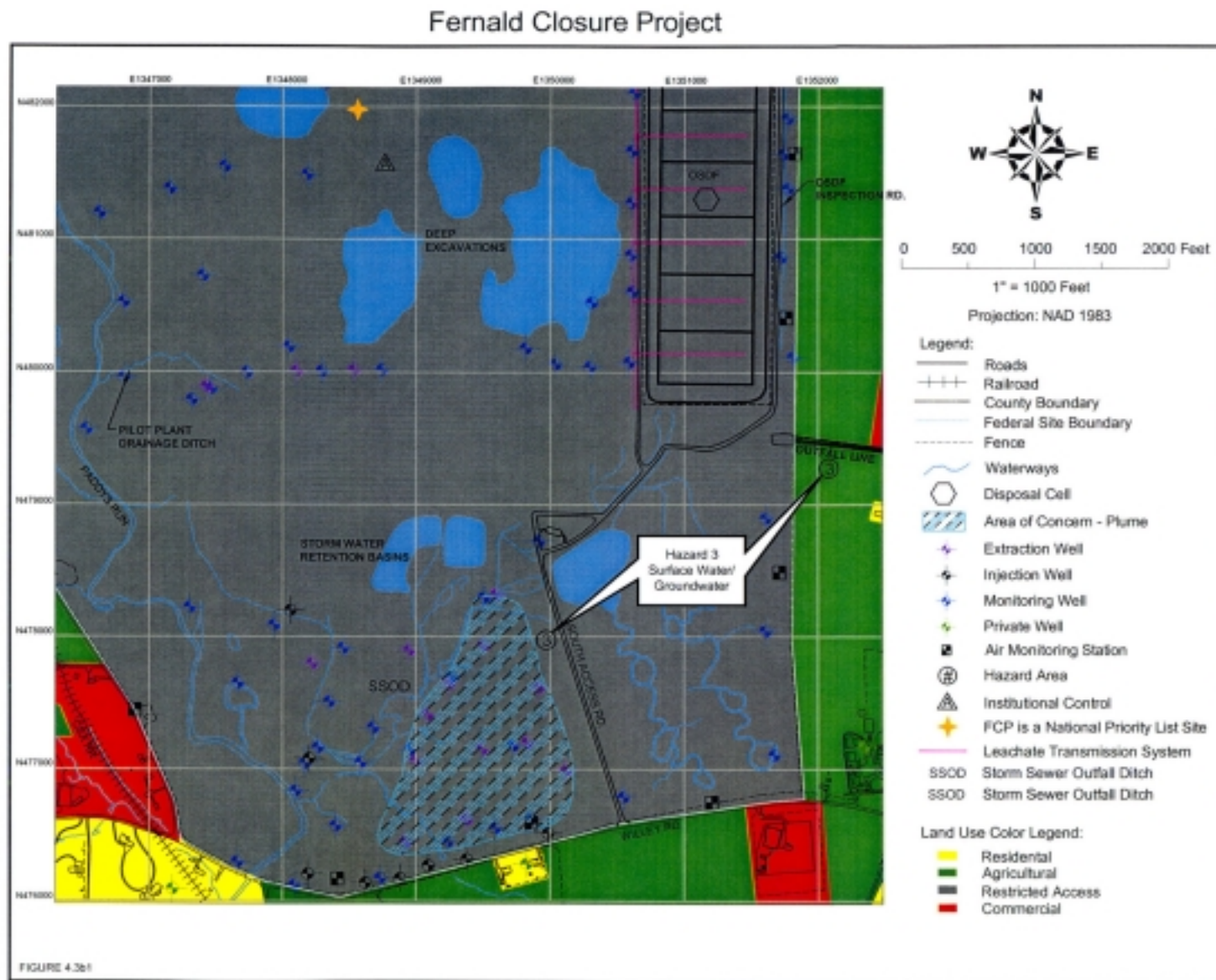
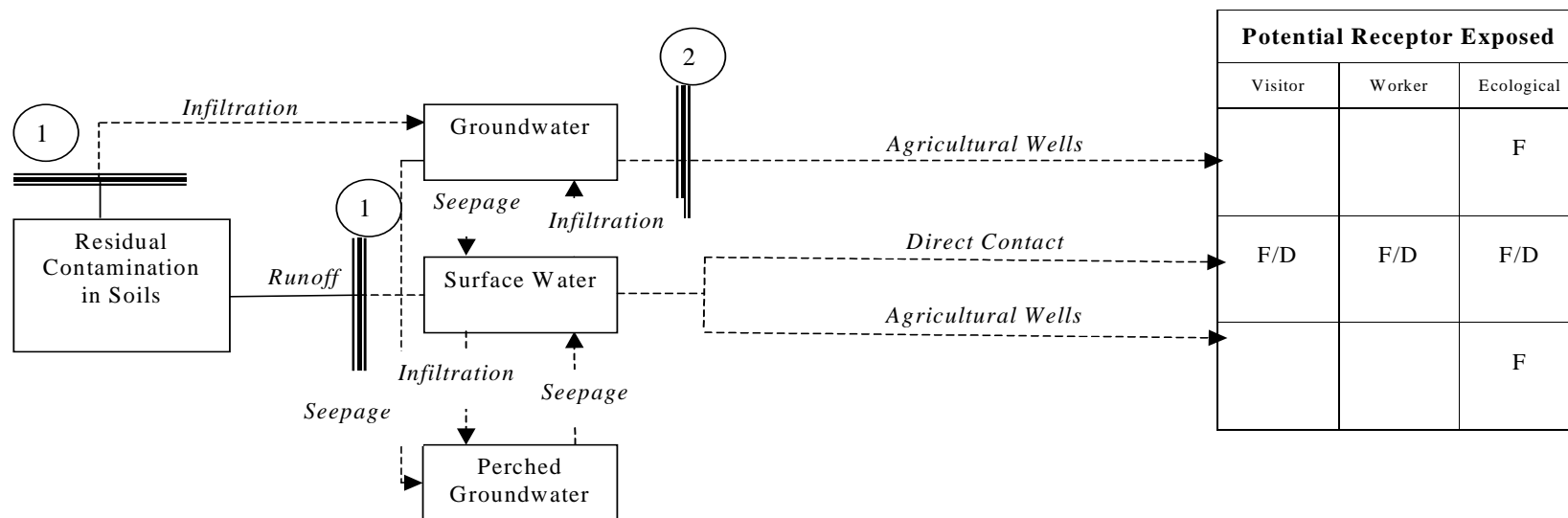
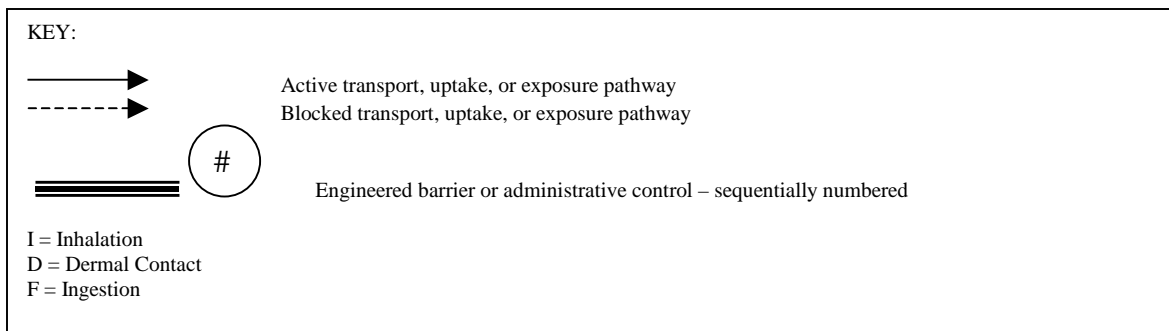


Figure 4.3b1. Hazard Area 3 surface water/groundwater map – RBES.

Figure 4.3b2. Hazard Area 3 surface water/groundwater CSM – RBES.





#### Narrative – Potential Release Mechanisms

This is a simplified conceptual model of potential environmental transport and exposure pathways for uranium contaminated surface water and groundwater. While no release to the environment is assumed, this model considers potential release and exposure pathways.

The primary source of contamination to the surface water and groundwater is the residual contamination in the soils. Treatment of the groundwater plume will consist of pumping the existing extraction wells, blending the flows from the wells with untreated storm water and remediation wastewater, and discharging the blended flow to the Great Miami River. Discharging will continue until the plume has met groundwater FRLs.

The potential predominant release mechanisms of contaminants in wastewaters to the environment are (a) infiltration of surface water to groundwater and perched groundwater and (b) seepage from perched groundwater to surface water, perched groundwater to groundwater, and groundwater to surface water.

The potential exposure mechanism to the Recreational User is direct contact with and ingestion of surface water.

The potential exposure mechanism to ecological receptors is ingestion of contaminated well water and direct contact with surface water.

#### Narrative – RBES Barriers/Interventions

The steps taken to mitigate potential exposures are as follows:

1. Monitoring of the discharge stream to the Great Miami River will continue to ensure that the stream meets the ROD based discharge limits.
2. Use of contaminated groundwater off site will be prohibited until the plume meets the U.S. EPA Drinking Water Standard for uranium of 30 ppb.
3. Intervention - The FCP site will remain federal government property with limited public access for educational purposes.



#### **4.4 HAZARD AREA 4 – INFRASTRUCTURE**

##### **Background**

The OU2 and OU5 RODs require the excavation of contaminated soil above negotiated cleanup levels. The site areas requiring excavation cover 400 acres. In addition to contaminated soil, building foundations, concrete storage pads, parking lots, roads, and below-grade piping will be removed as part of soil excavation.

##### **RBES**

The Silos Treatment Facility and TTA structures were installed clean. The above grade concrete debris from D&D of the buildings will be certified clean and provide clean, hard fill for select deep excavations (see Figure 4.4b1). Deep excavations targeted for clean, hard fill include the main storm sewer line under the main parking lot and other select excavations. Excavations can be completely or partially filled with no impact on site restoration plans.

All clean rock and debris currently in Paddys Run will be left alone (rip rap at Silos, concrete support at railroad trestle). The stream corridor will be certified clean and leaving the debris in place will not increase risks to receptors.

The new outfall line will be cleaned and abandoned in place. The new outfall line is constructed of high-density polyethylene (HDPE) and can be cleaned on the inside to eliminate the risk of contaminants leaching into surrounding soils. Abandoning it in place will save construction costs associated with excavation of the lines.

Implementing the RBES Vision will continue to be fully protective to human health and the environment (See Figure 4.4b2).

FINAL DRAFT FCP RBES VISION -REVISION 3

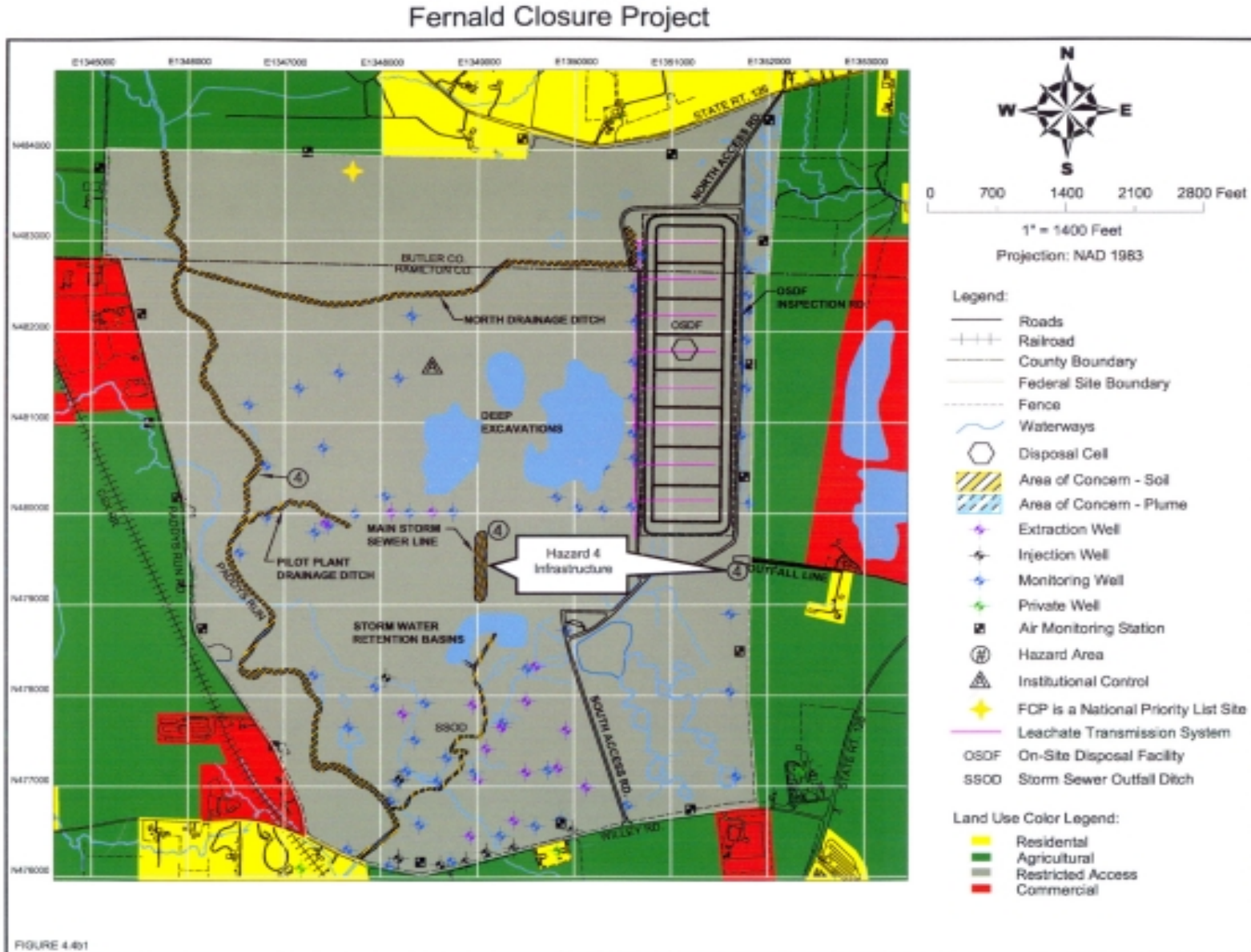
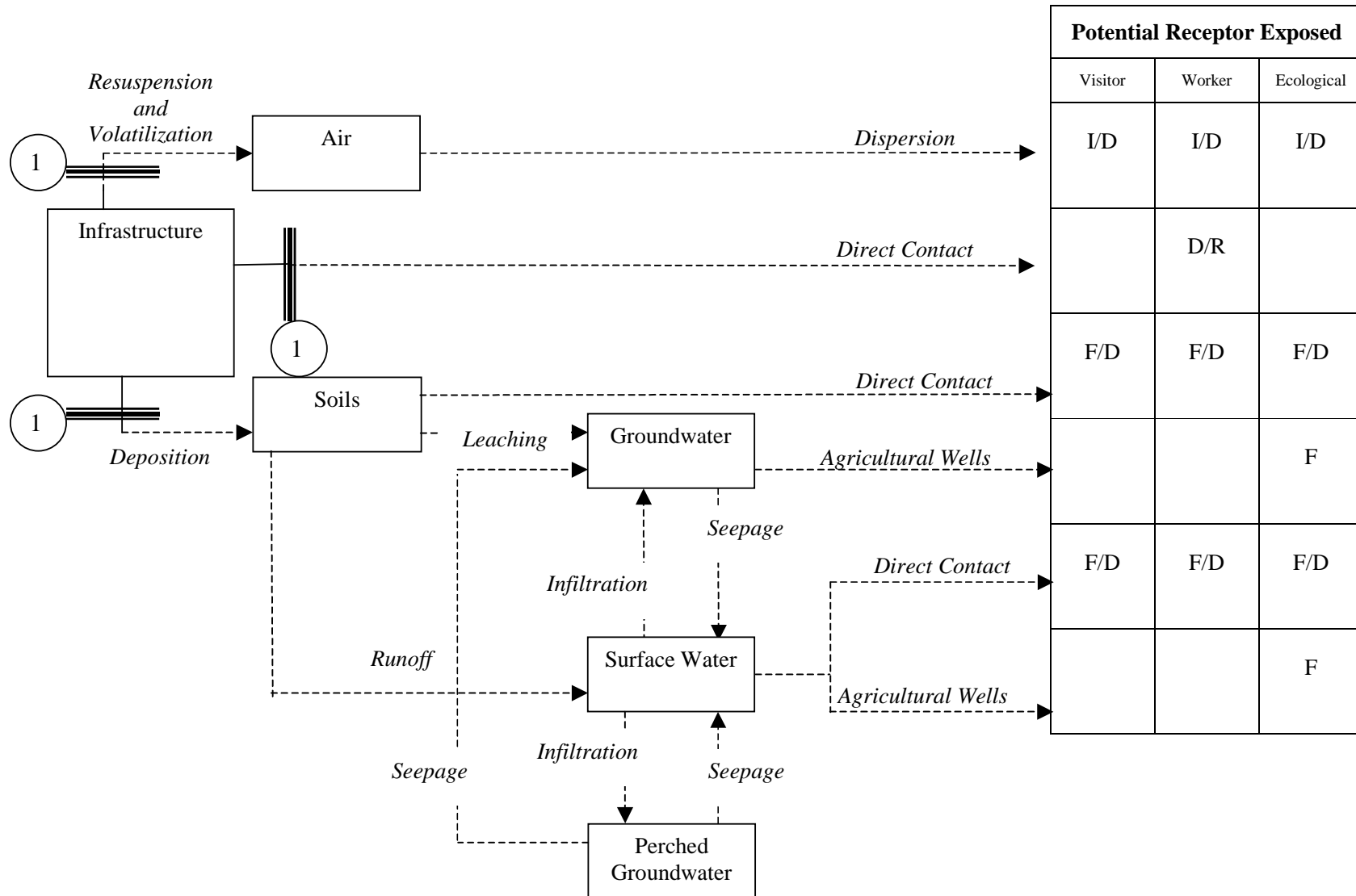
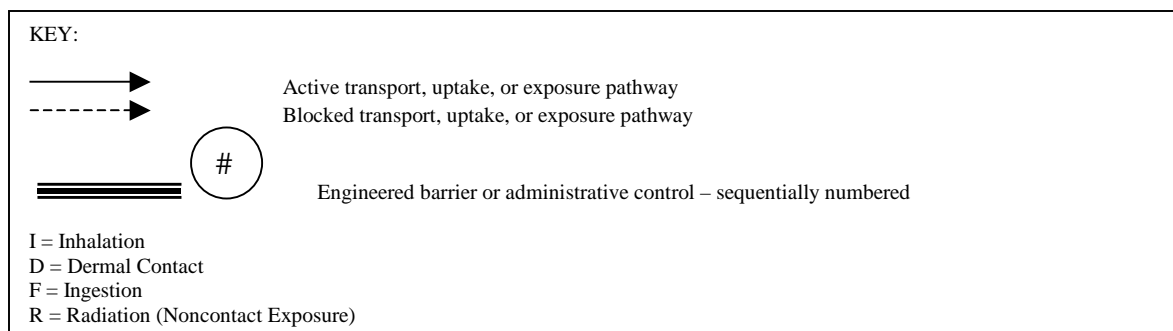


Figure 4.4b1. Hazard Area 4 infrastructure map – RBES.

Figure 4.4b2. Hazard Area 4 infrastructure CSM – RBES.



## ***FINAL DRAFT FCP RBES VISION -REVISION 3***



### **Narrative – Potential Release Mechanisms**

This is a simplified conceptual model of the potential environmental transport and exposure pathways for infrastructure left on site. The new outfall line, will be cleaned and abandoned in place. The D&D concrete debris from clean structures will be certified clean and used as clean, hard fill in select deep excavations. Institutional controls will ensure that the new outfall line and clean concrete debris are not excavated or removed. While no release to the environment is assumed, this model considers potential release and exposure pathways.

The potential predominant release mechanisms to the environment are (a) resuspension of contaminated particulate matter, (b) volatilization of exposed chemical residuals, and (c) deposition of contaminants to the surrounding soil. Besides release through primary mechanisms, the contaminants introduced into the environment are likely to flow between different environmental media such as air, surface soil, surface water and groundwater due to interconnecting mechanisms such as runoff, deposition, infiltration, etc.

Based on these interconnecting transport mechanisms, potential human exposure mechanisms are: inhalation of volatilized vapors and resuspended particulate matter, and direct contact with contaminated soil or surface water. Groundskeepers, because they are at the site on a regular basis, would have the highest potential for exposure.

The ecological exposure mechanisms are likely to be inhalation of volatilized vapors and resuspended particulate matter, ingestion of contaminated water, ingestion of plants grown using contaminated water, secondary ingestion of aquatic organisms that uptake contaminants through sediments or water, direct contact with contaminated soils or water.

### **Narrative – RBES Barriers/Interventions**

The steps taken to mitigate potential exposures are as follows:

1. The new outfall line will be cleaned and abandoned in place.
2. The D&D concrete debris from clean structures will be certified clean and used as clean, hard fill in select excavations.
3. Intervention - The FCP site will remain federal government property with limited public access for educational purposes.

## REFERENCES

U.S. Department of Energy, 1994a, "Interim Record of Decision for Remedial Actions at Operable Unit 3," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1994b, "Record of Decision for Remedial Actions at Operable Unit 4," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1995a, "Remedial Investigation Report for Operable Unit 5," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.\*

U.S. Department of Energy, 1995b, "Proposed Plan for Operable Unit 5," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1995c, "Record of Decision for Remedial Actions at Operable Unit 1," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1995d, "Record of Decision for Remedial Actions at Operable Unit 2," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1996a, "Record of Decision for Remedial Actions at Operable Unit 3," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1996b, "Record of Decision for Remedial Actions at Operable Unit 5," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1996c, "Remedial Design Work Plan for Remedial Actions at Operable Unit 5," Final, Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1996d, "Remedial Action Work Plan for Soil Remediation Project Area 1, Phase I," Rev. G, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1997, "Baseline Remedial Strategy Report," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1998, "Sitewide Excavation Plan," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.\*\*

U.S. Department of Energy, 1999a, "Operations and Maintenance Master Plan," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 1999b, "Environmental Assessment for Proposed Final Land Use at the Fernald Environmental Management Project," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

U.S. Department of Energy, 2003a, "Guidance for Developing A Site-Specific Risk-Based End State Vision," DOE-Office of Environmental Management, Washington, D.C.

U.S. Department of Energy, 2003b, "Comprehensive Groundwater Strategy Report," Final, Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, Ohio.

\* = Includes Baseline Risk Assessment

\*\* = Includes Evaluation of Ecological Constituents of Concern

**ATTACHMENT A**  
Variance Report  
Fernald Closure Project

**ATTACHMENT A  
VARIANCE REPORT  
FERNALD CLOSURE PROJECT**

This report presents the differences between the current agreements end state and the risk-based end state (RBES) Vision for the Fernald Closure Project (FCP). The intent of this report is to communicate the individual Variances and provide management with enough data to evaluate the impact of the variances on current plans.

Table 1 provides a description of each proposed Variance along with the impacts of the Variance, barriers to implementation, and any recommendations that may be helpful in the evaluation of the variance. Two maps are provided to illustrate the variances: Figure 1 depicts the end state based on current agreements and Figure 2 depicts the end state based on RBES.



**FINAL DRAFT FCP RBES VISION -REVISION 3**

**Table 1. Summary of FCP site variances.**

<b>ID No.</b>	<b>Description of Variance</b>	<b>Impacts (In Terms of Scope, Cost, Schedule, and Risk)</b>	<b>Barriers to Achieving RBES</b>	<b>Recommendations</b>
V-1	<p><b>On-Site Disposal Facility:</b></p> <p>a) The OSDF was designed for a specific capacity and Waste Acceptance Criteria (WAC) that are applicable to the entire facility. Current practice is to accept only materials that are below the WAC without any consideration being given to average WAC resulting from mixing. Without the consideration of mixing/ blending/averaging in calculating WAC, the OSDF is being underutilized and off-site shipment of material is greater than necessary. The RBES will change these practices to allow application of the OSDF WAC by averaging, which was the original intention and technical basis of the WAC.</p> <p>Additional changes in the application of the WAC would involve disposal of the Silos 1 &amp; 2 debris in the OSDF and all other soils below WAC Resource Conservation and Recovery Act (RCRA) levels.</p> <p>b) OSDF leachate, at a rate of approximately 1 gallon/min (gpm), will be discharged to surface water bodies in the</p>	<p><b>Risk:</b></p> <p>a) The OSDF was engineered and constructed to accept waste material that meets the WAC based on cell average concentration. Implementing the RBES Vision will add about 30,000 cubic yards of impacted soil to OSDF and potentially increase risks levels associated with the OSDF from <math>1 \times 10^{-7}</math> to <math>1 \times 10^{-5}</math> risk levels will continue to be fully protective of human health and the environment.</p> <p>Under the current remediation approach, above WAC material is transported off-property as part of the Waste Pits Remedial Action Project. The transportation risks associated with the OU 1 selected remedy were evaluated in the OU 1 FS and were based on the off-site transportation of 628,200 cubic yards of material. Offsite transportation risks associated with the OU 1 selected remedy are as follows: 3.4 potential mechanical injuries to train crew members; 0.034 potential fatalities to train crew members; 0.030 potential mechanical injuries to other members of the public; and 0.0015 potential fatalities to other members of the public. A reduction in the off-site transportation of 30,000</p>	<p>The OU5 Record of Decision (ROD) Response to Comment (RTC) document includes the good faith commitment that the WAC will be a "not-to-exceed" limit. The WAC "not-to-exceed" commitment is not contained in the ROD itself. At a minimum, clarification with Stakeholders and Regulators will be required to implement the change. The approved WAC Attainment Plan also contains the agreement that only soil that is below WAC can be disposed of the in OSDF (i.e., the WAC is a "not-to-exceed" limit). Agreement with Regulators and an approved revision to the WAC Attainment Plan is required to implement the new approach.</p> <p>A revision to the WAC Attainment Plan needs to be negotiated to allow for the disposal of the Silos 1 &amp; 2 debris and the below WAC RCRA Soil.</p> <p>The OSDF Post Closure Care and Inspection Plan requires the treatment of leachate prior to discharge. Requirements related to leachate treatment are being transferred to Groundwater/ Leak Detection and Leachate Monitoring Plan (G/LD&amp;LMP) that will be revised later in CY2003. The G/LD&amp;LMP will need to be revised</p>	<p>Department of Energy (DOE) at the Field Office or Headquarters level needs to determine if it is appropriate to pursue changing WAC application through negotiation at the Field Office or Headquarters level. Currently, it does not appear that there will be support for changing WAC application, working with Agency Representatives at the Site Level. This change represents a large cost savings and is a high priority with the Site Office.</p> <p><b>Action:</b></p> <p>a) A change in the application of WAC will require clarification of the commitment made in the OU5 ROD RTC document with Stakeholders and Regulators at a minimum. A change in the application of the WAC anytime prior to Closure would have a positive impact on the ability to achieve timely Closure. The earlier the change is negotiated, the greater the benefit to the FCP.</p> <p>b) DOE Ohio Field Office or Headquarters representatives need to discuss the proposed variance to leachate treatment with Stakeholders and Regulators. Decisions</p>

**FINAL DRAFT FCP RBES VISION -REVISION 3**

<b>ID No.</b>	<b>Description of Variance</b>	<b>Impacts (In Terms of Scope, Cost, Schedule, and Risk)</b>	<b>Barriers to Achieving RBES</b>	<b>Recommendations</b>
	<p>former production area without further treatment, as long as all surface water Final Remediation Levels (FRLs) are met.</p>	<p>cubic yards of material would decrease OU 1 risks by 5%. Risks to on-site workers would not change under this scenario, since impacted material would still require excavation and transportation to the OSDF.</p> <p>The 1 gpm flow of leachate will not likely impact the overall ability of the surface water to meet FRLs. Implementing the RBES Vision will continue to be fully protective of human health and the environment.</p> <p><b>Scope:</b></p> <p>a) There would no longer be a requirement to reject all material that exceeds the WAC. Most of the above WAC (AWAC) soil currently requiring shipment off-property could be disposed of in the OSDF. Baseline estimates show approximately 30,000 cubic yards of AWAC soil remaining to be excavated.</p> <p><b>Cost:</b></p> <p>a) The remaining 30,000 cubic yards of AWAC soil is estimated to cost approximately \$12 million for excavation and off-site disposal. Disposal in the OSDF is estimated to cost approximately \$900,000, resulting in a net cost savings</p>	<p>to eliminate the requirement for treatment of all leachate, as long as all surface water FRLs are met.</p>	<p>regarding leachate treatment need to be in place by the end of FY04 to allow adequate time for planning and installation of a post-closure treatment system, if required.</p>

***FINAL DRAFT FCP RBES VISION -REVISION 3***

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		<p>of more than \$11 million. On-property disposal costs are approximately \$30 per cubic yard compared to off-property disposal costs at approximately \$400 per cubic yard.</p> <p>b) Surface water disposal of the leachate will eliminate the need for treatment in the Advanced Wastewater Treatment (AWWT) Facility or by passive treatment. The cost savings would occur in the post-closure period and do not result in a savings to current baseline remediation costs. However, the cost savings during the post-closure period is very significant.</p> <p><b>Schedule:</b></p> <p>b) Changing the approach to meeting WAC will eliminate some of the risk associated with meeting the 2006 Closure Date. The process for completing soil remediation will be significantly streamlined, but it is difficult to quantify the precise impact to the schedule.</p>		

**FINAL DRAFT FCP RBES VISION -REVISION 3**

ID No.	Description of Variance	Impacts (In Terms of Scope, Cost, Schedule, and Risk)	Barriers to Achieving RBES	Recommendations
V-2	<p><b>Subsurface Soils/Sediments:</b></p> <p>a) The use of sediment FRLs at the FCP is undefined in the OU5 ROD. Current informal agreements with the Agencies have centered on the use of soil FRLs (82 ppm uranium) for streams and ponds. The RBES would apply the sediment FRLs (210 ppm uranium) to streams and ponds and other excavations targeted for future ponds and open water.</p> <p>b) Segregation of clean soil during deep excavation of foundations and subsequent use as fill will decrease the amount of soil sent to the OSDF. Applying the Cross Media Preliminary Remediation Goals (CPRGs) will reduce excavation of subsurface soil that has no surface exposure pathways.</p>	<p><b>Risk:</b></p> <p>a) The soil FRL takes into account the inhalation pathway and is therefore lower than the sediment FRL that assumes no inhalation pathway. The ponds and open water will have permanent water coverage resulting in no change in risk due to use of the sediment FRLs. Paddys Run does dry up in the late summer months, but controls (i.e., fences, signs, barriers) will be in place to keep people from utilizing the streambed in unallowable ways (e.g., motorcycles, ATVs).</p> <p>The use of the CPRGs will reduce soil excavation volume by 8,500 cubic yards and continue to be fully protective to the Recreational User of the site. Any soil that meets CPRGs will be buried, thus eliminating the exposure pathway to any soil that is above surface soil FRLs.</p> <p>Risks associated with excavating and hauling impacted soil to the OSDF were evaluated in the OU 5 FS. The selected remedy contemplated 1.835 million cubic yards of soil being disposed of in the OSDF. Risks associated with the excavation and disposal of</p>	<p>a) The OU5 ROD does discuss the use of sediment FRLs, but the exact areas of application are undefined. Informal discussions with the Agencies indicate their position that soil FRLs should be applied to streams and ponds. Agency agreement on the application of the sediment FRL would need to be secured.</p> <p>b) The approved Site-wide Excavation Plan (SEP) currently documents the agreement that all excavated soil is waste. An approved revision to the SEP will need to be secured to allow use of the CPRGs for subsurface soil.</p>	<p>Preliminary discussions have occurred between the DOE Site Office and the Ohio EPA on use of the sediment FRL. To date, there has been some resistance from Ohio EPA to the idea of using sediment FRLs in Paddys Run and site drainage channels. The primary concern is that individuals could access Paddys Run when it is dry and be exposed to concentrations at the sediment FRL that are higher because the inhalation pathway is not included. Controls on the FCP should prevent unauthorized use of Paddys Run and other drainage channels.</p> <p><b>Action:</b> DOE at the Field Office or Headquarters level needs to meet with Regulators and Stakeholders and get concurrence on the proposed variance.</p> <p>a) There is no regulatory documentation that has to be changed to use the sediment FRL as the OU5 ROD discusses the use of Sediment FRLs.</p> <p>b) The use of CPRGs for subsurface soil will require a change in the OU5 ROD and an approved revision of the SEP.</p>

**FINAL DRAFT FCP RBES VISION -REVISION 3**

ID No.	Description of Variance	Impacts (In Terms of Scope, Cost, Schedule, and Risk)	Barriers to Achieving RBES	Recommendations
		<p>impacted soil are as follows: 122 projected mechanical injuries; 0.58 potential fatalities for onsite workers. Leaving 8,500 cubic yards of impacted soil in place would reduce these risks by 0.46%.</p> <p><b>Scope:</b></p> <p>a) Approximately 4 miles of streams and drainage channels exist on the FCP that will remain in their current configuration after remediation. It is estimated that ponds and open water could cover an additional 60 acres of the site by the completion of remediation. It is estimated that the use of the sediment FRL could reduce the amount of soil requiring excavation and disposal by 8,500 cubic yards.</p> <p><b>Cost:</b></p> <p>a) The use of the sediment FRLs in Paddys Run and the Storm Sewer Outfall Ditch (SSOD) will result in savings of approximately \$255,000 in excavation and disposal costs in the OSDF, based on a reduction in 8,500 cubic yards, as discussed above.</p> <p>b) The cost impact of applying the CPRGs is more difficult to quantify. The use of the</p>		

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		<p>CPRGs will certainly eliminate the need to dispose of significant quantities of subsurface soil in the OSDF.</p> <p><b>Schedule:</b> The use of the sediment FRLs and the CPRGs will reduce some of the risk associated with meeting the 2006 Closure date. The process of completing soil remediation will be streamlined as result of these changes in the FRL application.</p>		

**FINAL DRAFT FCP RBES VISION -REVISION 3**

<b>ID No.</b>	<b>Description of Variance</b>	<b>Impacts (In Terms of Scope, Cost, Schedule, and Risk)</b>	<b>Barriers to Achieving RBES</b>	<b>Recommendations</b>
V-3	<p><b>Surface Water/ Groundwater:</b> Current agreement requires pumping, treatment and re-injection of groundwater and treatment of storm water, remediation wastewater, and groundwater to meet uranium discharge limits to the Great Miami River.</p> <p>The RBES remedy would include full restoration of the aquifer to meet the uranium drinking water standard of 30 parts per billion (ppb), both on-site and off-site. The AWWT facility would be modified to retain 1800 gpm of the existing 2600 gpm capacity. This would allow early D&amp;D of 90% of the existing AWWT footprint (soil and debris) and placement into the OSDF. This alternate treatment approach would not require formal changes to the OU 5 ROD or associated regulatory permits. Discharge limits would be accomplished primarily by adjusting groundwater pumping rates when necessary and terminating groundwater re-injection without significantly delaying the aquifer restoration time frame.</p>	<p><b>Risk:</b> This alternative will eliminate the transportation risks associated with the off-site disposal of 70,000 cubic yards of soil and debris. The risk levels outlined below are based on rail transportation as evaluated in the OU 1 FS for the selected remedy. Off-site shipment by truck will result in higher risk levels. The risks associated with off-property shipment of 70,000 cubic yards of AWWT debris would include: the potential for 2.78 mechanical injuries to on-site workers during excavation and waste loading; .04 potential fatalities to on-site workers during excavation and waste loading; 0.38 mechanical injuries to transportation crew members; .0038 potential fatalities to transportation crew members; .0033 potential mechanical injuries to members of the public; and .00017 potential fatalities to members of the public. Under this scenario, the 70,000 cubic yards of AWWT debris would be hauled and disposed of in the OSDF.</p> <p>Risks associated with loading and hauling AWWT debris to the OSDF would include: the potential for 4.65 mechanical injuries to on-site workers; and the potential for .022 fatalities for on-site workers.</p>	<p>Stakeholder and regulatory concurrence must occur by April 30, 2004 in order for timely initiation and completion of the design, procurement and construction of an alternate treatment system.</p> <p>Although no formal ROD change is required, regulatory support relative to existing outfall criteria in the OU5 ROD, will likely be necessary to make this objective achievable. This support would specifically provide operational flexibilities during the initial stabilization phase of the replacement system.</p>	<p>DOE Ohio Field Office and DOE-HQ, through evaluation of the RBES documents and the Groundwater Strategy Report will need to achieve Stakeholder and Regulator acceptance of the RBES remedy not later than April 30, 2004. Continued discussions with Stakeholders and Regulators through the ongoing FCAB process is required in order to agree upon the RBES remedy in time to initiate detailed design, procurement and construction.</p>

***FINAL DRAFT FCP RBES VISION -REVISION 3***

<b>ID No.</b>	<b>Description of Variance</b>	<b>Impacts (In Terms of Scope, Cost, Schedule, and Risk)</b>	<b>Barriers to Achieving RBES</b>	<b>Recommendations</b>
		<p><b>Scope:</b> The current baseline groundwater remedy uses pump and treat technology with groundwater re-injection for the duration of the remedy, which is predicted to achieve cleanup levels in all impacted areas of the aquifer by 2023.</p> <p>The RBES remedy will include pump and treat and full restoration of the aquifer both on-site and off-site to meet the drinking water standard.</p> <p><b>Cost:</b> The cost of the baseline remedy is estimated to be \$168 million. The RBES remedy cost has not been fully calculated to date. Installation of the replacement treatment system is assumed to be approximately \$5 million. This additional cost will be off-set by the ability to dispose of most of the AWWT and underlying impacted soil (up to 70,000 cubic yards) in the OSDF rather than the entire AWWT requiring off-site disposal after site closure.</p> <p><b>Schedule:</b> Groundwater modeling predicts the current groundwater remedy would achieve the cleanup levels by 2023 in all impacted areas of the aquifer (on- and off-site). No significant change in the groundwater remediation schedule would occur under the RBES remedy.</p>		



**FINAL DRAFT FCP RBES VISION -REVISION 3**

<b>ID No.</b>	<b>Description of Variance</b>	<b>Impacts (In Terms of Scope, Cost, Schedule, and Risk)</b>	<b>Barriers to Achieving RBES</b>	<b>Recommendations</b>
V-4	<p><b>Infrastructure:</b> Current agreements require the removal of the new outfall line. All buildings, foundations and associated structures must also be removed under current agreements. RBES is to abandon the outfall lines, cofferdam, and other structures in place.</p>	<p><b>Risk:</b> Leaving the new outfall line in place will eliminate the need to dispose of 5,000 cubic yards of soil and debris in the OSDF and will continue to be fully protective of human health and the environment. The new outfall line is plastic and can be cleaned and left in place without risk of future contamination.</p> <p>The use of D&amp;D concrete debris as clean, hard fill will eliminate the need to dispose of approximately 12,000 cubic yards of material in the OSDF. All concrete debris will be certified clean. Use of the material as clean, hard fill will continue to be fully protective of human health and the environment.</p> <p>Institutional controls to ensure the new outfall line and D&amp;D concrete debris are not excavated or removed will be required during LM.</p> <p>Based on the risk evaluation in the OU 5 FS, risks associated with the removal of the new outfall line and disposal of the identified D&amp;D concrete debris in the OSDF would include: the potential for 0.67 mechanical injuries to on-site workers; and the potential for .0032 fatalities for on-site workers.</p>	<p>The OU3 ROD requires the removal of all man-made debris from the site. A clarification or potential change to the ROD will have to be negotiated to leave infrastructure after closure.</p> <p>Leaving the outfall lines in place and the associated Institutional Controls will be a significant issue.</p> <p>The grouting and abandonment plan for the monitoring wells would require compliance with OAC 3701-28-07 and 3745-9-10 governing private and public wells. In some cases, negotiation with individual landowners may be required for off-property wells.</p>	<p>The idea of leaving specific infrastructure (e.g., outfall lines, cofferdam) has not been discussed in detail with Agencies or Stakeholders. DOE at the Site Office level has issued conceptual public use plans for the FCP for public review and comment showing access roads and parking areas. Stakeholders and the Agencies generally supported some form of limited public access and use of the FCP. Discussions regarding monitoring and maintaining the OSDF requiring site access have been discussed in several public forums. The need for access roads and parking lots should not be controversial.</p> <p><b>Action:</b> DOE Ohio Field Office or Headquarters representatives need to meet with Regulators and Stakeholders and get concurrence on the proposed variances. Once Regulator and Stakeholder concurrence is achieved, a clarification or change to the ROD will be required.</p>

***FINAL DRAFT FCP RBES VISION -REVISION 3***

<b>ID No.</b>	<b>Description of Variance</b>	<b>Impacts (In Terms of Scope, Cost, Schedule, and Risk)</b>	<b>Barriers to Achieving RBES</b>	<b>Recommendations</b>
		<p><b>Scope:</b> The old outfall line would be grouted and left in place and the new outfall line would be cleaned and left in place.</p> <p><b>Cost:</b> Leaving the infrastructure listed above would eliminate the need to dispose of approximately 17,000 cubic yards of soil and debris in the OSDF. The total savings associated with this alternative would be approximately \$1,600,000.</p> <p><b>Schedule:</b> Leaving the new outfall line in place will not have an impact on the baseline schedule since it will occur after the completion of aquifer restoration.</p> <p>Use of D&amp;D concrete debris as clean, hard fill will accelerate the closure of the On-Site Disposal Facility by approximately 90 days and would significantly reduce the schedule risk associated with the March 2006 completion date.</p>		

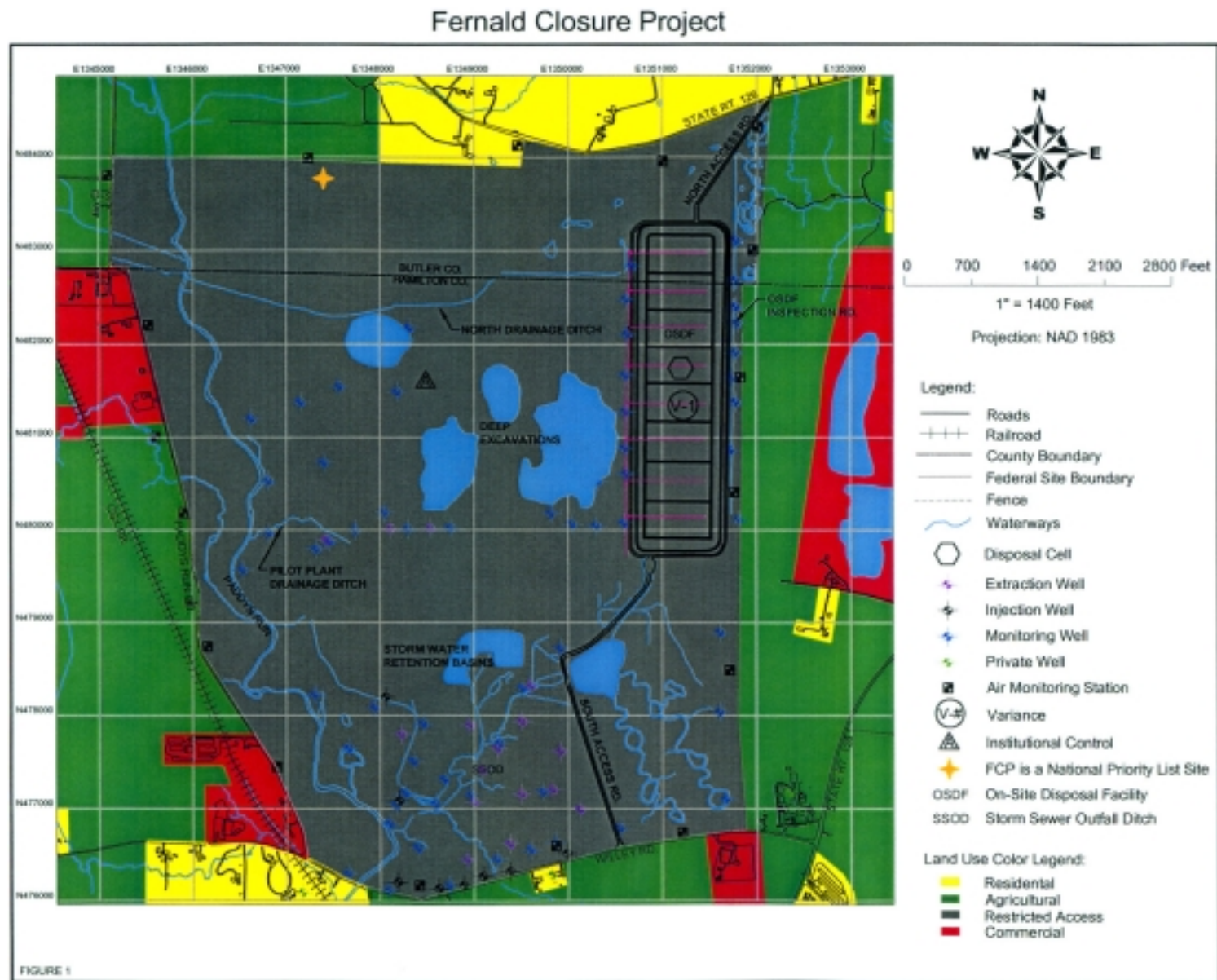
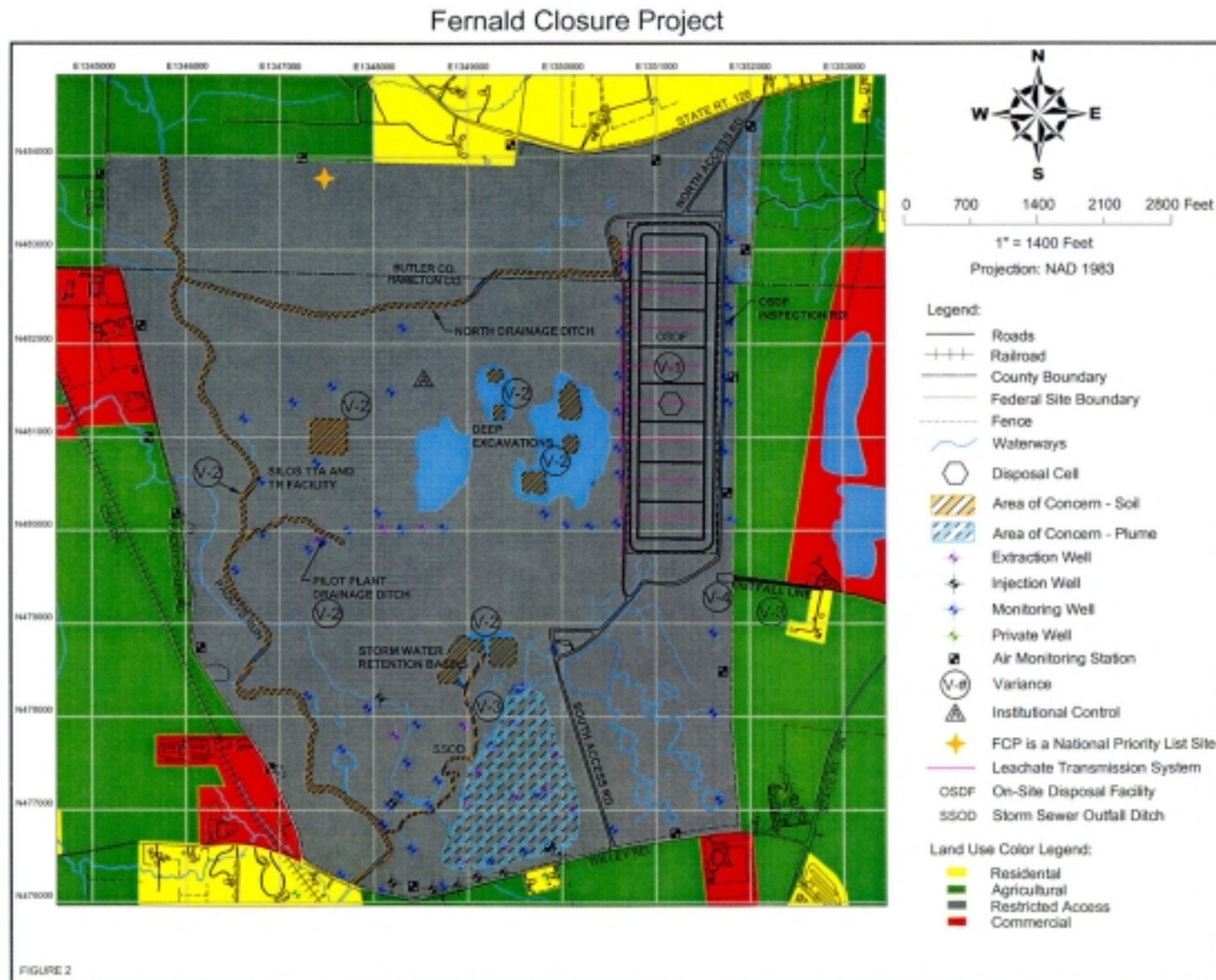


Figure 1. Site wide hazard map – current agreement end state.

**FINAL DRAFT FCP RBES VISION -REVISION 3**



**Figure 2. Site wide hazard map – RBES.**

**ATTACHMENT B**

Fernald RBES Press Articles, Stakeholder Comments and Meeting Handout

# Fernald clean-up change proposed

Citizens leader  
promises fight

By Dan Klepal  
*The Cincinnati Enquirer*

CROSBY TWP. — U.S. Department of Energy officials are considering a plan that would allow them to stop treating groundwater contaminated with uranium underneath the former Fernald uranium enrichment plant and, instead, dump it directly into the Great Miami River for more than 19 years, beginning in 2005.

The plan, which would save the federal government about \$80 million, would also eliminate the rule that limits to 600 pounds per year the allowable amount of uranium discharged into the river from the site.

Currently, there is a water treatment plant on the Fernald property that treats the tainted groundwater. After being cleaned to drinking water standards, that water is then re-injected into the aquifer so that contaminated groundwater is pushed more quickly toward extraction wells.

But that process is expensive — estimated to cost \$168 million before it is finished — and DOE officials recently estimated that the aquifer clean-up will take twice as long as originally thought, possibly lasting until 2021. That led to

See FERNALD, Page A7

"Fernald clean-up change proposed"

## Fernald: Department of Energy wants to dump tainted water

From Page A1

the new study, which outlines six cheaper alternatives.

Of those alternatives, the DOE's "preferred option" is to tear down the water treatment facility and stop treating the tainted groundwater altogether, according to documents obtained by the *Enquirer*.

"We realize that some of the alternatives ... are different than what we agreed upon in the past," said Glenn Griffiths, the DOE's acting director at Fernald. "Some of the (discharge) levels in the past were set because we could do it. We have a world-class treatment facility on site. (Those levels) are more conservative than what we now feel we need to consider. The question is: Can we get to the same destination on a different road?"

The DOE's "preferred" road would increase the allowable uranium content in discharges into the river by 1,600 percent per discharge.

But before the new plan could take effect, the DOE would have to seek a change in the legally binding agreement it signed a decade ago that requires the aquifer water to be treated to drinking water standards. That won't be easy, because it appears such an effort would be fought - both by the 14,000 residents who live near the plant and are represented by the Fernald Citizen's Advisory Board, and by the Ohio Environmental Protection Agency.

"Hell no," Lisa Crawford, leader of the Fernald citizen's board, said when asked for her reaction to the proposal. "We're not gonna go there. And if they try to take us there, this community will raise 500

barrels of hell, and then we will sue."

Graham Mitchell, chief of OEPA's Office of Federal Facilities Oversight, said the state's top environmental agency also is against the proposal as it stands. Mitchell pointed out that there is major risk involved with the plan: Namely, there could be additional contamination discovered after the treatment plant is torn down in 2005, thus leaving the DOE incapable of dealing with it.

"It's just not consistent with the overall clean-up strategy developed at Fernald over the past 10 years," Mitchell said. "When we get to the end - and we're nowhere near that - there are a whole bunch of steps that need to occur, and they probably need to occur with a treatment system in place."

"Throwing these major changes in, at this point, does not seem productive."

The DOE's handling of this proposal has upset some. The report outlining the alternatives was produced June 30, but it still has not been shared with the public. A presentation for citizens and regulators is scheduled for Oct. 24.

"Any other time, we would have been handed a draft of the document and been asked our opinion," Crawford said. "They've been sitting on this since June."

Tom Schneider, a Fernald supervisor for the OEPA, agreed.

"The handling of this is completely inconsistent with the successes we've had at Fernald," Schneider said. "Those (successes) have been open processes. In this case, it's something DOE has done behind closed doors. We're getting it at the same time they're

going public with it, and they're asking us to buy into it. It's sort of baffling.

"And the issue falls apart before any significant technical discussion even takes place. If you have a treatment technique that's demonstrated to work, you don't just shut that off and decide one day that you don't need to do treatment anymore and start dumping in the river."

Griffiths said the process in deciding how best to treat the aquifer will be a public one. He said the process is just beginning.

"All we're saying is let's talk about it," Griffiths said. "And if those conversations lead us to a point where it doesn't make sense, we won't do it. It's a matter of perspective. We've concluded there could be significant cost savings, and we can still be protective to the environment, so we need to investigate the options."

"We're going to lay (the alternatives) out and say here are, from our perspective, the pros and cons of each and the public debate will take place at that point."

The aquifer cleanup is just one of six major projects on the \$4.4 billion, taxpayer-funded Fernald cleanup.

Others include tearing down buildings that were used in extraction of uranium from metal; removing the soil underneath; cleaning waste pits that were used to store radioactive waste; emptying three 50-year-old concrete silos that are housing radioactive waste from the first nuclear experiments; and building a disposal facility that will house low-level waste in perpetuity.

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## Fernald | Groundwater Don't compromise cleanup

The idea that the U.S. Department of Energy would even consider unrestricted dumping of uranium-contaminated water from Fernald directly into the Great Miami River is outrageous, even if the cost of cleanup has risen far beyond the original estimates.

Now that it believes cleansing the groundwater at the former uranium enrichment plant could take twice as long as expected — until 2021 or later — DOE is going public with 12 possible alternatives. But the "preferred" option calls for treatment of contaminated groundwater to stop by 2005, then pumped-out water would be dumped directly into the Great Miami River for 19 years. That dubious departure from binding legal agreements signed 10 years ago would free DOE and contractor Fluor Fernald from limits now set at 600 pounds of uranium discharged into the river per year. The plan also calls for dismantling Fernald's advanced water treatment plant.

The new plan shifts the contamination problem from the Fernald site to the river. It cuts cost by substituting river dilution for water treatment.

Ohio EPA and Fernald's 14,000 neighbors are rightly incensed at this proposed change in long-standing cleanup strategy. If DOE tries to dump the agreement and dump much more tainted water into the Great Miami, Lisa Crawford, head of Fernald's Citizen's Advisory Board, warns, "this community will raise 500 barrels of hell, and then we will sue."

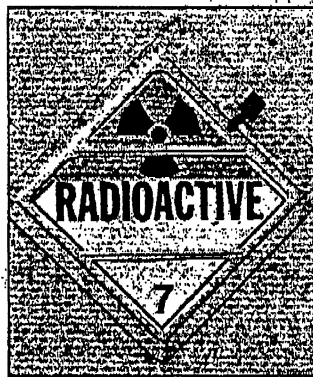
U.S. EPA should exercise rigorous oversight to make sure the existing agreements are not sacrificed to cost concerns or political timetables and

that no switch to alternatives is made until the effects on the river, fish and public health are fully studied. Dismantling Fernald's water treatment plant before groundwater cleanup is anywhere near done seems such a patently bad idea it must be suspected of being used as a bargaining chip that DOE could give up in any compromise deal.

It's been estimated Fernald groundwater remediation will cost at least \$168 million, and that is just one of six major projects in the \$4.4 billion cleanup. Congress faces many other sites with similar, costly cleanups. DOE estimates the alternative aquifer cleanup plan for Fernald could save as much as \$80 million. The current method of pumping out tainted ground-

water, treating it to remove uranium, then reinjecting it back into the aquifer is slow, expensive work. But nobody ever promised weapons plant cleanups would be quick or cheap. Congress should stay the course.

The history of cleaning up the former weapons plant northeast of Cincinnati has been riddled with unexpected setbacks. Even if all the necessary sign-offs could be obtained to change the agreements, critics warn that an alternative plan could hit unexpected complications during cleanup or even afterward. Cleanup of waste pits and silos can never be perfect. The aquifer could be recontaminated. That's one reason the cleanup contractor is obligated to follow up years after cleanup ends to see if the parts per billion uranium count in Fernald groundwater has rebounded. If so, the water treatment plant could still be needed. Proposed alternatives require a full public vetting.



A warning sign on a truck at the Fernald cleanup site.



"Ohioans in D.C. blast plan for Fernald water"

# Ohioans in D.C. blast plan for Fernald water

By Dan Klepal  
*The Cincinnati Enquirer*

Ohio congressmen sent a letter to the Department of Energy's top official involved in the Fernald nuclear cleanup, criticizing the agency for a plan that would allow it to stop treating contaminated groundwater next year. Instead, it would be dumped directly into the Great Miami River.

Reps. Steve Chabot of Cincinnati and Rob Portman of Terrace Park, along with Sens. Pat DeWine and George Voinovich, all Republicans, say in the letter they were unaware of the proposed change

until reading of it in the *Enquirer* Oct. 4.

The letter is also critical of the DOE for keeping the idea secret for more than three months. The DOE's project manager, Fluor Fernald, completed the proposal June 30. A public hearing is scheduled Oct. 21.

"We strongly believe that in a project as costly, environmentally sensitive, and expansive as the Fernald clean-up—that affects the safety of workers, the health of surrounding communities and the stewardship of taxpayer dollars—public participation is essential in determining the most prudent ap-

proach to closure," the letter says.

"We would like to clearly state that we have serious concerns regarding any attempt to alter this agreement," the letter says.

DOE Ohio Field Manager Bob Warther, to whom the letter was addressed, was not in the office Thursday and had not seen the letter, according to spokesman Gary Stegner.

"Until we review the letter, we can't say anything," Stegner said.

The Great Miami Aquifer was contaminated by decades of radioactive waste being dumped in open fields at Fernald. Rainwashed that waste into Paddy's Run creek, which drains into the aquifer and directly into the underground lake.

Fluor Fernald, the company handling the \$4.4 billion, taxpayer funded clean-up, prepared a report that outlines six alternatives to cleaning the groundwater in the treatment plant. Of the six alternatives, the DOE's preferred option is to tear down the treatment plant next year and stop treating the tainted groundwater altogether.

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October 22, 2003  
The Cincinnati Enquirer  
*"No plan 'preferred,' officials say"*

## **No plan 'preferred,' officials say**

### **Proposal to stop treating Fernald water protested**

**CROSBY TOWNSHIP** - Officials with the Department of Energy Tuesday backed off a plan that would allow them to stop treating contaminated groundwater underneath the Fernald nuclear cleanup site, instead dumping it directly into the Great Miami River.

In a public meeting Tuesday to explain seven options for treating the groundwater, residents were angry and peppered officials with questions.

In June, energy officials commissioned a report for treating the groundwater.

A "talking points" document relating to the report said the government's "preferred alternative" is to tear down the treatment facility in 2005, begin dumping the tainted groundwater directly into the river, and remove all limits for the amount of uranium it is allowed to pump into the river from the site.

Currently the site can discharge a maximum of 600 pounds of uranium into the river annually.

Dumping the tainted groundwater would have saved about \$85 million, but dumped approximately 8,000 pounds of uranium into the Great Miami.

Glenn Griffiths, the energy department's acting director at Fernald, said the government doesn't really have a preference on how to treat the groundwater.

"That was a poor choice of words," Griffiths said of the term "preferred alternative."

"It implies the decision is already made and that efforts have been made to support it," he said. "All the alternatives are exactly equal at this point."

The seven options range from continuing the current treatment method to replacing the treatment plant with a less expensive mobile system or demolishing the on-site plant in 2011 so less uranium would be dumped into the river.

Griffiths said a lengthy public process will precede any decision made on the issue.

That was good news to the approximately 50 residents who came to Tuesday's meeting.

Lisa Crawford, a resident who lives near the plant and is head of the Fernald Residents for Environmental Safety and Health (FRESH), said her organization would sue if the government tries to change the deal now.

"We agreed to what we agreed to," Crawford said. "You can't stop in the middle of the road and just say 'We're not going to do this anymore.'"

A 179-acre plume of cancer-causing uranium sits in the groundwater underneath Fernald.

The energy department is required to clean that contamination so that it meets drinking water standards.

Currently, a world-class treatment facility treats that water before it is re-injected into the ground or pumped out to the river.


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Thursday, December 4, 2003

## Easier radiation cleanup fought

By Dan Klepal  
 The Cincinnati Enquirer

**CROSBY TOWNSHIP** - The Department of Energy, which oversees the \$4.4 billion, cleanup at the former Fernald nuclear facility, wants to relax several standards it agreed to more than a decade ago so the job can be finished quicker and cheaper.

Department of Energy officials claim public health and the environment will still be protected.

But the proposed changes, made public two weeks ago, outraged nearby residents who say cleanup managers are now trying to wiggle out of important details agreed to in the early 1990s after months and, in some cases, years of hard-fought negotiations.

Last week, the federal Environmental Protection Agency joined the chorus in opposition to the DOE's proposed rule changes.

Gary Schafer, chief of EPA's Federal Facilities Section, said in a letter that the nation's top environmental watchdog doesn't support any of the proposed changes for Fernald. Schafer also criticized how the ideas were created, saying they were hatched in closed-door meetings with no public input.

That process, the letter says, is "inconsistent with how such issues were handled over the last 10 years."

Among the changes the Department of Energy is proposing:

- Determining if soil is sufficiently cleaned by taking an average of the uranium content over entire areas, rather than the current rule prohibiting high levels in any part of the area.
- Cleaning the Great Miami Aquifer, also contaminated by uranium, to drinking water standards only in areas outside the site's boundaries. The current rule requires the entire aquifer - both under the site and outside it - be cleaned to

Updated E

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- Reducing the level of cleanup necessary for soil deeper than 3 feet.

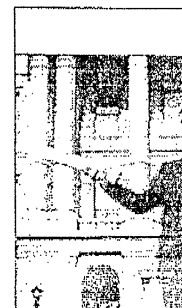
None of those ideas sits well with Lisa Crawford, who heads up the Fernald Residents for Environmental Safety and Health, which successfully sued the government over environmental contamination at the site more than 20 years ago.

Crawford said the residents around Fernald have worked too hard securing stringent cleanup rules to let them go now.

"We are not willing to let DOE gut what we did 10 years ago, that's just not going to happen," Crawford said. "And it seems like the EPA is right in line with us. We're all pretty upset about this."

DOE officials defend the ideas and the process. They say the ideas were born in "brainstorming" sessions, and that none will be approved without full consent of the EPA and the public.

E-mail [dklepai@enquirer.com](mailto:dklepai@enquirer.com)



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## AT FERNALD ..... RISK-BASED END STATE VISION CRITICIZED

The Dept. of Energy's draft "risk-based end state vision" for Fernald has Ohio regulators and the Environmental Protection Agency up in arms over proposed changes to the site's closure plan. All DOE cleanup sites have been working on completing "risk-based end-state visions" that Assistant Secretary Jessie Roberson and other top Environmental Management officials hope to use to define when cleanup will end at each site. While DOE Ohio officials say the document is simply a tool that evaluates cleanup remedies according to actual risk to the public and is not a "decision document," both the Ohio EPA and U.S. EPA are calling on the Department to abandon the risk-based end state planning process and follow the cleanup agreements already in place. In a letter to DOE Ohio Field Office Manager Robert Warther Dec. 1, Ohio EPA Southwest District Office Chief Thomas A. Winston asserted that "in comparison to the evaluation and discussion that resulted in current cleanup requirements, this evaluation is anemic in terms of its rigor and devoid of the meaningful regulator and public discussion that produces implementable decisions. The result is a list of potential changes that are all problematic in that they ignore the rich history of decisions at Fernald." In a similar letter sent to DOE Nov. 26, EPA Region 5 Federal Facilities Chief Gary Schafer declared that EPA "does not support any of

the activities" recommended in the risk-based end state document. Chief among the regulators' concerns are DOE proposals to:

- Change the waste acceptance criteria at the On-Site Disposal Facility to allow for blending of waste to meet the acceptance standards, which DOE asserts was the "original intention and technical basis" for the facility;
- Use the sediment final remediation level of 210 parts per million for streams and ponds rather than the more stringent soil final remediation level of 82 parts per million that is required by current agreements;
- Relax the uranium discharge requirements for the Great Miami River from the current 30 parts per billion to 530 parts per billion in order to meet groundwater cleanup milestones by 2017;
- Stop current "pump-and-treat" operations for ground and surface water; and
- Leave outfall lines and other structures in place along the Great Miami River instead of removing all structures as required by current agreements.

DOE Fernald spokesman Gary Stegner said the Department "recognizes" the concerns of the regulators, empha-

sizing that the end state vision is "not a decision document; it's just an exercise we're going through." Stegner said "it's very clear that the climate here in Fernald is not good for pursuing any changes to previous Records of Decision" and there are currently "no plans to do so." If regulatory changes are pursued, "that decision will come from headquarters," Stegner said.

Both the state and federal regulators criticized DOE for a lack of public involvement in preparing the end state document. "It is our understanding that no change to the document occurred following the public meeting, where adamant opposition was expressed, prior to submittal to DOE HQ," Winston wrote. "This leaves one to question what the point of the public meeting was other than to say

a meeting occurred." Ohio officials said they viewed the risk-based end state planning process as merely an internal DOE exercise with little or no regulatory significance. "I would suggest DOE not proceed to propose any changes based on this exercise," Winston wrote. "To the extent that you have satisfied an internal DOE screening process, you can report that you have completed that task. But, clearly, additional effort put into [risk-based end state vision] would not be prudent." Winston added that "further work on the [risk-based end state vision] will only further distract vital resources and staff from focusing on achieving DOE's 2006 cleanup goal. The process has already cost substantial dollars in personnel time and contractor effort as well as caused damage to the work relationships at the site."

Dirtier Site?'

Ohio, EPA Officials Rip DOE Proposals On Fernald Cleanup  
BY GEORGE LOBSENZ (Energy Daily)

Federal and state regulators have fired off scathing attacks on Energy Department proposals for "risk-based" changes to cleanup of the Fernald facility in Ohio, saying the plan had "seriously damaged" DOE's relationships with regulators and the community and raised concerns that DOE was willing to leave a "dirtier site" in order to complete remediation efforts by 2006.

In unusually hostile terms, officials with the U.S. Environmental Protection Agency and the Ohio Environmental Protection Agency over the last week emphatically rejected all of DOE's proposals to relax certain groundwater, soil and other cleanup standards for the former uranium processing plant near Cincinnati.

The regulators said the proposed changes would violate past agreements with the local community on the amount of residual contamination that could remain at the site after cleanup work was done. And they said that in stark contrast to past productive collaboration with regulators and the community on Fernald cleanup strategy, DOE had developed its plan in near-total secrecy.

The secrecy was so notable, Ohio regulators said, that they only were able to obtain a full copy of DOE's plan at a November 18 public hearing on the department's proposed cleanup changes. Following the public hearing, the state officials said DOE apparently made no revisions to the plan-known as the draft Risk-Based End States (RBES) Vision document-despite an outpouring of public criticism at the meeting.

Further, the Ohio officials said the proposed cleanup changes were especially damaging to DOE's credibility because they followed another department proposal in October to greatly curtail groundwater cleanup operations at Fernald, resulting in sharply increased uranium discharges to a nearby river-at concentrations much higher than federal safe drinking water limits. That plan also was developed by DOE on its own and met with overwhelming public and regulator criticism.

"The lack of public and regulatory involvement in this document and its predecessor, the Comprehensive Groundwater Strategy Report, have seriously damaged the productive working relationships between DOE and the regulatory agencies and the public," said Thomas Winston, head of the Ohio EPA's southwest district office, in a December 1 letter to Thomas Warther, manager of DOE's Ohio Field Office.

"The past two months have seen numerous negative press articles and a growing distrust of DOE in the community. This, after the DOE Fernald site has been seen as a national leader over the past decade in successful stakeholder involvement and productive working relationships between DOE, regulators and the community."

Winston said DOE's proposals were "unacceptable" and all the more objectionable in that the department appeared to be brushing aside cleanup agreements reached after long negotiations with the public on what were appropriate levels of residual contamination to leave at the site. While DOE suggested its proposals were based on risk analyses showing that loosened cleanup standards would not endanger human health or the environment, Winston said Fernald stakeholders already had made such judgments in the existing cleanup agreements for the site.

"At the Fernald site, DOE, regulators and stakeholders employed a process to evaluate cleanup options based upon risk and community values long before the development of this plan," Winston said. "To expect the public or regulators to

consider changing these agreements based upon a few weeks of internal DOE document development and very limited public involvement is naïve, and seemingly ignores all the effort put in by the community; site personnel and regulators over the past 10 years."

Winston noted that the department's plan was put forward in response to a directive from DOE headquarters designed to advance the Bush administration's "accelerated cleanup" initiative for federal nuclear weapons sites. The administration has portrayed the program as a sensible effort to speed cleanup by better assessing residual contamination risks and making appropriate changes to cleanup strategies; environmentalists and some state officials see it as a naked attempt to cut cleanup costs by relaxing remediation standards. Fernald is a showcase site for the accelerated cleanup effort as one of the first DOE sites scheduled for completion, with the deadline being 2006. However, the directive from DOE headquarters to propose changes to the Fernald cleanup plan suggests the department and its contractor, Fluor Fernald, are facing difficulties in meeting that date.

Winston suggested DOE Fernald officials tell headquarters officials that they had "satisfied" the directive on possible changes to Fernald's cleanup plan-and then promptly drop the matter.

Questioning DOE's commitment in that respect, Winston warned Warther: "Some of your strongest supporters have already begun to question DOE's commitment to truly remediate the site. We have heard a growing perception that DOE is willing to change remedies, leave behind a dirtier site and place additional burdens on the community in order to complete work in 2006. We hope and expect this is not the case."

An EPA official made many of the same points in a November 26 letter to Warther, in somewhat more subdued language. "U.S. EPA does not support any of [DOE's proposed changes]...and would not support a reduced list including any of the alternatives," said Gary Schafer, chief of the federal facilities section at EPA Region 5 headquarters in Chicago. "All of the alternatives presented in the RBES are inconsistent with earlier records of decisions for the site and agreements made with the stakeholders."

Schafer also said the public participation process for the RBES document had been "minimal" and that state regulators and the community already had shown great willingness to compromise on waste removal at the site where risk analysis showed it was appropriate. "As opposed to shipping all contaminated materials off-site and cleaning up to background levels, the stakeholders agreed to the construction of an on-site disposal cell over a sole-source aquifer, and limiting land use to an undeveloped park," he noted. "U.S. DOE agreed to ship the lower-volume, yet highest contaminated materials off-site. "This early vision developed by all the involved stakeholders allowed the cleanup to progress quickly and saved U.S. DOE billions in cleanup costs.... U.S. EPA recommends no further pursuit of the actions proposed in the RBES document."

Gary Stegner, a spokesman for DOE's Ohio Field Office, said the regulators' criticism was not surprising given the strong public opposition to DOE's proposed changes. "It was clear from comments we received from our stakeholders that they think cleanup is going very, very well.... They don't want to change anything; they seem to be in no mood to entertain any changes." Stegner said it was up to DOE headquarters to determine if the department would pursue the proposed changes any further.

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March 1, 2004  
The Cincinnati Enquirer  
"Fernald cleanup changes sought"

# Fernald cleanup changes sought

Rules may be  
relaxed to get  
job done faster

By Dan Klepal  
*The Cincinnati Enquirer*

**CROSBY TWP** - Fernald officials are expected today to meet with Hamilton County commissioners to discuss relaxing nuclear cleanup standards at the former uranium processing plant.

Nationwide, the U.S. Department of Energy has been re-evaluating standards at nuclear cleanup facilities in an effort to get the projects done more quickly and cheaply.

Fernald was a Cold War-era plant that produced uranium for enrichment and use in nuclear weapons. A \$4.4 billion cleanup of the site is scheduled to be complete in 2006.

The Energy Department re-evaluation would base cleanup standards on minimum requirements to protect public health. That approach would clash with higher standards for cleaning up Fernald

See FERNALD, Page A8



March 1, 2004

The Cincinnati Enquirer

"Fernald cleanup changes sought"

# Fernald: Standards being re-evaluated

From Page A1

that a citizens group and state and federal environmental agencies fought to set more than a decade ago. "This is all about money. They are looking at every way possible they can get out of doing what they promised, and what we expect done," said Lisa Crawford, who heads Fernald Residents for Environmental Safety and Health. "I'm the first person to want to save taxpayer money, but we are not going to accept a shoddier cleanup."

Crawford and others say the Fernald project has legally binding agreements in place that set limits on how much radioactive waste will stay at the site and how much uranium will be allowed in groundwater and soil. They now question whether the Energy Department is trying to change those agreements.

"At this stage of the game, (changing the clean-up agreements) is something not likely to happen," said Gary Stegner, spokesman for the Department of Energy. "The reality of the situation is, with us shooting for a 2006 completion, it would be extremely difficult" to change the standards.

Still, a written proposal that will be sent by local Department of Energy managers to Washington, D.C., proposes a handful of ideas that could do just that.

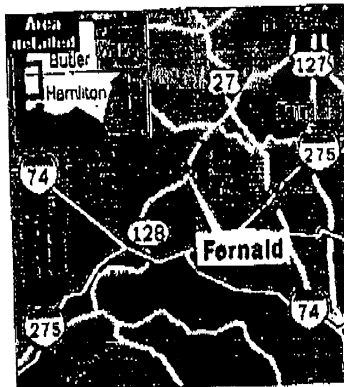
The proposal, which Fernald officials will discuss with commissioners, proposes:

- Using an overall average of radioactivity levels to decide what waste can go into the on-site disposal facility, instead of the current rule that caps the level of radioactivity for individual pieces of waste. This would mean more items with higher radioactivity levels would stay at Fernald than originally planned.

- Replacing the on-site treatment plant that cleans uranium-tainted groundwater with a smaller, portable facility within a year. This would extend the groundwater cleanup by three years.

- Leaving behind pipes that carry tainted water to the Great Miami River, rather than removing them.

Citizens can tell the Energy Department what they think of the proposals until March 15. Then the report will be sent to Washington, where senior officials will decide whether to pursue any of the pro-



posals.

Tom Schneider, site coordinator at Fernald for the Ohio Environmental Protection Agency, said he is concerned that the Energy Department is trying to push through a cheaper cleanup.

"All we can do is react to what they're putting in writing. So no, I don't have a high level of confidence that DOE won't pursue this," Schneider said. "If they know that nobody finds a lesser cleanup unacceptable, I'm not sure why they put it in writing."

Hamilton County Commissioner

Todd Fortune said today's meeting, which is open to the public, is important for a number of reasons.

"We need to keep the pressure on them to make sure these suggestions don't become the standard," Fortune said. "It's important for us to formalize our objections to their report and give citizens the opportunity to voice their concerns."

The Fernald site has been besieged with problems during the past year, including two critical nuclear safety reports, several near-miss accidents that could have resulted in worker deaths, and the shutting down of two major projects because of repeated safety problems.

The cleanup contractor, Fluor Fernald, is shooting for a June 2006 completion. The California-based company will earn hundreds of millions of dollars in incentives if they meet that deadline. Additional incentives include \$8 million for every month the project is completed before June 2006. The company is penalized an equal monthly amount if they miss their deadline.

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March 2, 2004  
The Cincinnati Enquirer  
"Fernald standards upheld"

# Fernald standards upheld

By Dan Klepal  
The Cincinnati Enquirer

## County told feds backing off changes in cleanup plan

**CROSBY TWP.** — U.S. Department of Energy officials in charge of the \$4.4 billion cleanup at the cold-war era Fernald uranium processing plant said Monday they will abandon pursuit of the most controversial proposed changes to cleanup standards at the nuclear site.

The department, which spends more than \$7 billion annually on nuclear cleanup sites across the nation, has started a program called "Risk-based End-states" that aims to make sure the cleanups are done as quickly and cheaply as possible. The idea is to try to change cleanup standards for things such as groundwater and soil to the bare minimum that would protect public health.

Fernald cleanup standards were arrived at nearly a decade ago, after years of debate and negotiations

among citizens near the plant, the state and federal environmental protection agencies and the Department of Energy. The Risk-based End-state report for Fernald will be sent to Washington at the end of the month after the public comment period is over.

Jack Craig, deputy director of the Department of Energy's Ohio Field Office, said there just isn't time to change legally binding agreements that impose cleanup standards. The Fernald cleanup is about 70 percent complete, and a June 2006 deadline is fast approaching.

Craig and other officials involved in the cleanup at Fernald appeared Monday before the Hamilton County Commission to answer questions. The commissioners are expected to sign a resolution Wednesday saying they oppose

any changes to cleanup standards.

"Where we are at today, any changes to the cleanup standards — those are off the table and we are no longer pursuing those," Craig said.

But Tom Winston, chief of the Ohio Environmental Protection Agency's Southwest District Office, said Department of Energy officials in Washington could still try to implement the money-saving program at all sites across the country by an act of Congress.

"What assurances can you give us that there will be no effort to get these changes through the back door on the people of Hamilton County?" Commissioner Todd Portune asked.

"I'm not sure I can give you that assurance," Craig said.

Lisa Crawford, leader of a citizens' group that negotiated many of the cleanup standards and still

keeps tabs on the project, said she's still concerned that the Department of Energy's proposal will leave Fernald a dirtier site.

Among the proposals still in the Department of Energy's document: using an overall average of the radioactivity levels to decide what waste can go into an on-site disposal facility, instead of the current rule that caps those levels; and replacing the water treatment plant cleaning uranium from groundwater with a smaller unit that would delay that part of the cleanup by three years.

"A couple of big things were taken out of the report, but there's still a lot of stuff in there that could come back and smack us in the face," Crawford said. "We don't want to renegotiate anything."

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April 26, 2004

Weapons Complex Monitor

Pages 5 & 6

"DOE citizen panels concerned about transfer of cleanup work to NNSA"

## DOE CITIZEN PANELS CONCERNED ABOUT TRANSFER OF CLEANUP WORK TO NNSA

The planned transfer of some cleanup responsibilities to the National Nuclear Security Administration in FY 2006 was among the top concerns raised by the chairs of the Environmental Management Site-Specific Advisory Boards at a meeting last week at Dept. of Energy Headquarters in Washington, D.C. "We don't know where we are or where we're going," said Katherine Guidry, chair of the Northern New Mexico advisory board, which advises DOE on cleanup issues at Los Alamos National Laboratory. As previously reported, the lab will be one of the sites that is most affected by the decision to transfer cleanup responsibilities from the Office of Environmental Management to NNSA. Assistant Secretary for Environmental Management Jessie Roberson told the group that the Department is "still discussing what activities will transfer and what activities will not," but environmental management work that is "comingled" with NNSA activities will be targeted. "I don't see this as confusing the issues," Roberson emphasized. "The lines are already confused. We're trying to provide some clarity."

Specifically, the advisory boards are concerned that because they are only chartered to advise the Office of Environmental Management, they will not be able to fulfill the same oversight role when EM activities are transferred to NNSA or the new Office of Legacy Management. "It reflects poorly on the credibility of the citizens' advisory board when we can only advise EM and not other environmental issues at the site," said Monte Wilson, chair of the advisory board for the Idaho site. Added Rocky Flats advisory board Chair Victor Holm, "We're concerned as to what our future will be and the future of public participation at these sites."

### Risk-Based 'Visions' Still a Concern

The advisory board chairs continued to raise concerns about the "risk-based end state vision" documents that each site is currently preparing. For some sites—such as Fernald and Paducah—the documents propose significant changes from current cleanup agreements. While DOE continues to point out that the "visions" are not decision-making documents, some of the advisory board chairs remain concerned. "So much time and effort is being put into the risk-based documents, we are concerned they will become a decision document at headquarters," asserted Paducah advisory board chair Bill Tanner. Roberson acknowledged that the process has been unpopular at some sites, but vowed to "press on" with the initiative. "This is a strategic document—we have to have a context for understanding what we are doing," Roberson said. "It is not a document upon which we will base decisions, but like a NEPA document, it will inform decisions."

The Department also faced criticism from the advisory board chairs on its plans to withhold \$350 million in FY 2005 cleanup funds unless issues surrounding the reclassification of high-level tank waste at Hanford, Savannah River and Idaho are resolved. DOE is currently pushing Congress to pass legislation authorizing the waste reclassification as it appeals a 2003 U.S. District Court ruling that such a reclassification would violate the Nuclear Waste Policy Act. "DOE should use the [\$350 million] for the treatment of low-level waste that isn't necessarily affected by the lawsuit," said Savannah River advisory board chair Jean Sulc. But Roberson emphasized that if the issues aren't resolved, "we would likely lose the money" in FY05. "If we can't do the work, we don't really have much use for the money," Roberson declared, although she acknowledged that "Congress may view things differently."■

## ENVIRONMENTAL CLEANUP

### Roberson vows to continue reviews of cleanup plans for DOE facilities

Despite protests that have forced two delays in the process, the Energy Department intends to stick with its reassessment of cleanup plans at contaminated nuclear weapons facilities. Assistant Secretary for Environmental Management Jessie Roberson, the leading advocate of the initiative, said last week she expects DOE managers at the facilities to complete the process even though she recently postponed the deadlines until later this year, close to the end of the Bush administration's term.

"I am going to press on with this initiative because we need it in this complex," Roberson said of the Risk-Based End State program, which she initiated last year to make sure DOE's planned outcomes for cleanups at weapons production and research facilities are the best options available to the department.

At the same time, Roberson, who participated in a Washington meeting of representatives from citizen advisory boards at nine DOE sites, said she will also insist that department site managers prepare new strategies for public involvement in the RBES program before they complete final reviews. She sought such plans recently when she postponed the deadline for the reviews to either September or December, depending on the site (*IE*, 12 April, 6). It was the second time she had put off the reviews because of complaints by federal and state regulators, citizen boards and others at some sites that the program threatened to disrupt established cleanup plans.

Some critics of the RBES program have claimed the latest deadline for the initiative suggests a diminished commitment by Roberson, whose departure from DOE has been the subject of persistent rumors would have it plans to leave DOE soon. She has rebuffed such speculation.

Roberson also reiterated early statements by her office that DOE would not use the reports resulting from the RBES process as the official reason for proposing changes in cleanup plans, which in most cases have been approved by federal and state regulators after extensive public review. "These are not documents upon which we would propose decision making," she said, though she added that they would "inform decision making."

In a separate presentation to the advisory board members, John Lehr, an official with the Environmental Management division's integration and disposition office, said DOE plans to use the RBES reviews to first "identify" possible changes in cleanup plans at sites and then to pursue such changes through negotiations with state and federal regulators and any other measures that may be necessary, such as legislation.

Lehr said 16 of the 28 "vision" documents prepared by DOE sites for headquarters officials, based on initial RBES reviews, had identified possible "variances" from existing cleanup plans.

Diverse views of the RBES program among DOE sites around the country were evident at the meeting Wednesday. Among the sharpest critics of the program is the Fernald Citizens Advisory Board, which has asked Roberson to relieve the

Fernald Environmental Management Project in Ohio of its obligation to participate in the reviews.

"The Fernald Citizens Advisory Board is concerned that implementation of the RBES policy has been a significant distraction to the Fernald site and has sapped critical focus from environmental cleanup activities," the panel said in a statement distributed at the meeting. "Throughout the [DOE] complex, substantial time and financial resources were channeled into developing RBES documents, with little understanding of the potential benefits of the policy to the site or to the communities in which they reside."

"The aggressive timeline and shifting deadlines hampered public participation and caused confusion, inconvenience, frustration and unnecessary expense at the sites and among the stakeholders," the citizens advisory board for the Idaho National Engineering and Environmental Laboratory said in a statement. "The CAB questions if DOE-headquarters is factoring public values and concerns into the Risk-Based End State process."

Among the seven other citizen boards participating in the meeting, the panels for the Paducah Gaseous Diffusion Plant in Kentucky and the Los Alamos National Laboratory in New Mexico each stated objections to the RBES program.

Countering those disapprovals were statements from other citizen boards endorsing the RBES program. The Rocky Flats Citizens Advisory Board said RBES-type principles were applied at DOE's Rocky Flats Environmental Technology Site in 1996, when the department and regulators agreed to a cleanup program, and last year, when they revised those plans. The process led to a "trade-off" in which DOE and regulators agreed to changes in soil remediation that the panel said appear more beneficial to the local community than the department's original cleanup plans for the site.

Todd Martin, chairman of the Hanford Citizens Advisory Committee, praised Roberson for expanding public involvement in the RBES program and said his panel was prepared to participate in the effort. "It will not be easy, it will not be fast, but we are prepared to give you something you can work with," Martin said. — *Bill Loveless*

### Waste funding strategy contains risk, Roberson admits; but DOE holds line

Congress may reject the Energy Department's request for \$350 million for a high-level waste program in FY-05 and spend the money on other activities if DOE cannot resolve a legal dispute over its plans for the program, Assistant Secretary for Environmental Management Jessie Roberson said last week. Members of citizen advisory boards at DOE facilities, who met with Roberson and other department officials last week, expressed concern over that prospect.

Roberson acknowledged the risk of DOE's request, which asks Congress for the \$350 million for treatment and disposal of HLW from nuclear weapons manufacture but specifies that the money would not be spent unless the department finds a solution to a decision by the U.S. District Court in Idaho last year that declared its HLW plans illegal.

She insisted, however, that DOE would not consider other

Public comments from the November 18 public meeting on Fernald Risk-Based End State Vision.

- Fernald is too far along in the cleanup process to go through ROD changes
- Didn't we already go through this exercise with the five Records of Decision?
- The RODs already reflect decisions based on risk
- We currently have legal binding agreements. I am angry as a community person that you are asking us to undo what has already been done
- We have negotiated and compromised as far as we are going to go
- Looks like you want permission for us to change our minds and the answer is "No"
- If DOE wants to revisit the end state, then let's look at the big picture and take out the On-Site Disposal Facility and remove soil from surrounding properties, etc.
- The Records of Decision represent social contracts with the community after we looked at every aspect of the cleanup. By the end of the decision --making all parties got to a place where they celebrated. However, lately, the social contract has been broken.
- We understand that the Risk-Based End State Vision is an exercise that hopefully won't go anywhere
- You are asking for more compromise without offering anything in return
- It doesn't look as though the savings as a result of this exercise would be significant
- If you mess with the RODs you will open Pandora's Box and divert valuable time and energy

The Fernald Citizens Advisory Board intends to write a letter opposing implementation of Risk-Based End State opportunities as stated in the document. This letter will be finalized at the December 2 meeting.

Fernald Residents for Environmental Safety and Health (FRESH) also intend to submit a letter with a similar sentiment.

**Congress of the United States**  
Washington, DC 20515

October 9, 2003

Mr. Bob Warther  
Ohio Field Manager  
Department of Energy  
175 Tri-County Parkway  
Springdale, OH 45246

Dear Mr. Warther:

We are writing in regards to published reports indicating that the Department of Energy (DOE) is considering stopping the treatment of uranium contaminated groundwater at Fernald.

As you may know, the *Cincinnati Enquirer* reported the proposed change in its October 4 edition. We were unaware the DOE was contemplating making such a fundamental change to the agreement it signed a decade ago requiring that the aquifer water be treated to drinking water standards.

We strongly believe that in a project as costly, environmentally sensitive, and expansive as the Fernald clean-up – that affects the safety of workers, the health of surrounding communities, and the stewardship of taxpayer dollars – public participation is essential in determining the most prudent approach to closure. We are concerned that DOE bypassed the Fernald Citizen's Advisory Board, the Ohio EPA, and the community's congressional representatives when this proposal was being developed. As Graham Mitchell, chief of OEPA's Office of Federal Facilities Oversight, stated in the *Enquirer*, "It's (DOE's plan) just not consistent with the overall clean-up strategy developed at Fernald over the past 10 years."

We would like to clearly state that we have serious concerns regarding any attempt to alter this agreement. It is our understanding that the current water treatment process is effective, although it would require considerable time and resources to complete, and supported by local stakeholders.

While we appreciate DOE's sensitivities with respect to the cost of the treatment, several important questions need to be answered. Are the proposed changes based on sound scientific studies? What are the other alternatives the DOE is studying to ensure the discharged water is clean? If the DOE were to release contaminated groundwater into the Great Miami, how would that impact the surrounding communities and the

environment?

Please provide us with a response to this report and explain why timely public participation in this very important matter apparently was not sought. As you know, Fernald is on schedule to close in 2006. In recent years, the project's stakeholders cultivated a productive working relationship that was beneficial to everyone. It is unfortunate that the Fernald community learned of this major proposed change to the existing contract from local media. We encourage the DOE to continue to work in good faith with the Fernald stakeholders to complete this important clean-up.

We look forward to your response.

Sincerely,



Steve Chabot  
Member of Congress



Rob Portman  
Member of Congress



Mike DeWine  
United States Senator



George V. Voinovich  
United States Senator

cc: Rick Dearborn, Assistant Secretary, DOE Congressional and Intergovernmental Affairs



*GW Strategy files*

**Department of Energy**

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

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The Honorable Rob Portman  
House of Representatives  
238 Cannon House Office Building  
Washington, D.C. 20515

OH-0050-04

Dear Representative Portman:

Thank you for your letter of October 9, 2003. Let me start off by assuring you that the Department of Energy is committed to keeping the regulators, the public and the congressional delegation informed and involved as we evaluate the Fernald Comprehensive Groundwater Strategy and the Risk-Based End State alternatives. I had the opportunity to meet with your staff on October 23, 2003 and discussed these matters in person. I believe it was a very productive meeting.

The Department of Energy is nearing completion of the Fernald site cleanup. As a result, in March 2003, the Department requested that its contractor, Fluor Fernald, review the scientific basis for groundwater treatment and discharge at the site and project the remaining scope of restoration. Specifically, we requested that the contractor analyze groundwater samples and review groundwater models developed over a decade ago. The Department also requested Fluor Fernald to prepare an analysis that compared the current path with alternate paths to complete the groundwater restoration effort in a manner that protects public health and the environment and is cost-effective.

The Fluor Fernald analysis was provided to the Department in June 2003. Unfortunately, in this instance, the Department did not take a proactive approach to communicating in advance with the regulators, the public and the congressional delegation. For this, I apologize. In addition, the term "preferred alternative" was incorrectly used in the draft documentation. This understandably raised concerns.





Congressman Portman

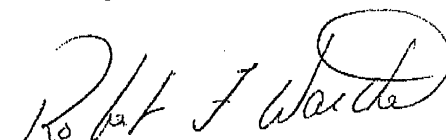
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NOV 14 2003

The Department met with the Federal and State regulators on October 17, 2003 and the Fernald Residents for Environment, Safety and Health (FRESH) on October 21, 2003. No changes to the alternatives document will be proposed until the Department has further, effective communication with the regulators, the community and the congressional delegation.

Thank you for the opportunity to address the concerns you raised in your letter.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert F. Warther", written in a cursive style.

Robert F. Warther  
Manager

cc:

Robert G. Card, Under Secretary  
Rick A. Dearborn, Assistant Secretary,  
Congressional and Intergovernmental Affairs  
Jessie H. Roberson, Assistant Secretary for  
Environmental Management  
James A. Saric, USEPA, Chicago  
Tom Winston, Ohio EPA, Dayton  
Glenn Griffiths, Fernald Closure Project



## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

NOV 14 2003

The Honorable George V. Voinovich  
United States Senate  
317 Hart Senate Office Building  
Washington, D.C. 20510

OH-0052-04

Dear Senator Voinovich:

Thank you for your letter of October 9, 2003. Let me start off by assuring you that the Department of Energy is committed to keeping the regulators, the public and the congressional delegation informed and involved as we evaluate the Fernald Comprehensive Groundwater Strategy and the Risk-Based End State alternatives. I had the opportunity to meet with your staff on October 7 and October 23, 2003 and discussed these matters in person. I believe it was a very productive meeting.

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Senator Voinovich

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Sincerely,

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Robert F. Warther  
Manager

cc:   
Robert G. Card, Under Secretary  
Rick A. Dearborn, Assistant Secretary,  
Congressional and Intergovernmental Affairs  
Jessie H. Roberson, Assistant Secretary for  
Environmental Management  
James A. Saric, USEPA, Chicago  
Tom Winston, Ohio EPA, Dayton  
Glenn Griffiths, Fernald Closure Project



## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

NOV 14 2003

The Honorable Mike DeWine  
United States Senate  
140 Russell Senate Office Building  
Washington, D.C. 20510

OH-0051-04

Dear Senator DeWine:

Thank you for your letter of October 9, 2003. Let me start off by assuring you that the Department of Energy is committed to keeping the regulators, the public and the congressional delegation informed and involved as we evaluate the Fernald Comprehensive Groundwater Strategy and the Risk-Based End State alternatives. I had the opportunity to meet with your staff on October 7 and October 23, 2003 and discussed these matters in person. I believe it was a very productive meeting.

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Senator DeWine

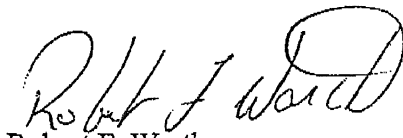
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Robert F. Warther  
Manager

cc:

Robert G. Card, Under Secretary  
Rick A. Dearborn, Assistant Secretary,  
Congressional and Intergovernmental Affairs  
Jessie H. Roberson, Assistant Secretary for  
Environmental Management  
James A. Saric, USEPA, Chicago  
Tom Winston, Ohio EPA, Dayton  
Glenn Griffiths, Fernald Closure Project



## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

NOV 14 2003

The Honorable Steve Chabot  
House of Representatives  
129 Cannon House Office Building  
Washington, D.C. 20515

OH-0049-04

Dear Representative Chabot:

Thank you for your letter of October 9, 2003. Let me start off by assuring you that the Department of Energy is committed to keeping the regulators, the public and the congressional delegation informed and involved as we evaluate the Fernald Comprehensive Groundwater Strategy and the Risk-Based End State alternatives. I had the opportunity to meet with your staff on October 23, 2003 and discussed these matters in person. I believe it was a very productive meeting.

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Congressman Chabot

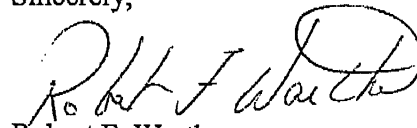
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NOV 14 2003

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Robert F. Warther  
Manager

cc:

Robert G. Card, Under Secretary  
Rick A. Dearborn, Assistant Secretary,  
Congressional and Intergovernmental Affairs  
Jessie H. Roberson, Assistant Secretary for  
Environmental Management  
James A. Saric, USEPA, Chicago  
Tom Winston, Ohio EPA, Dayton  
Glenn Griffiths, Fernald Closure Project



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

NOV 26 2003

SRF-6J

Mr. Robert Warther  
United States Department of Energy  
Ohio Field Office-Springdale  
175 Tri-County Parkway  
Cincinnati, Ohio 45246

RE: RBES Fernald, OH Site

Dear Mr. Warther:

The United States Environmental Protection Agency has reviewed the United States Department of Energy (U.S. DOE) draft Risk-Based End State vision (RBES) document for the Fernald, OH site dated December 1, 2003. This document presents a master list of potential changes to the site cleanup. U.S. EPA is not supportive of any of the proposed items on the master list.

On November 21, 2003, a public meeting was held on this topic. However, the public participation process with the RBES has been minimal and there has been little coordination with the regulators on this issue. The RBES document and the list of recommendations were developed and presented in a manner inconsistent with how such issues were handled over the last ten years. This document was not developed with any regulatory input or public participation, but rather was developed internally by U.S. DOE and its contractor Fluor Fernald. The regulators and some members of the public were only given a few days to review the document before the public meeting.

It is U.S. EPA's position that in the mid-1990s the Fernald, OH site has used the RBES approach and vision to develop an end state using a balanced approach. As opposed to shipping all contaminated materials off-site and cleaning up to background levels, the stakeholders agreed to the construction of an On-Site Disposal Cell over a sole source aquifer, and limiting the land use to an undeveloped park. U.S. DOE agreed to ship the lower volume, yet highest contaminated materials off-site. This early vision developed by all of the involved stakeholders allowed the cleanup to progress quickly and saved U.S. DOE billions in cleanup costs.

U.S. EPA does not support any of the activities provided in the "master list" for the site and would not support a reduced list including any of the alternatives. All of the alternatives presented in the RBES are inconsistent with earlier Records of Decision for the site and agreements made with the stakeholders.

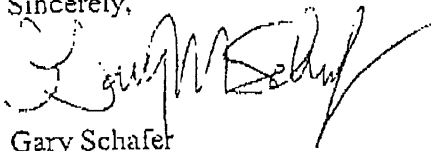
The RBES policy allows for some sites to require no further action or changes from their existing



path forward. The U.S. DOE Fernald, OH site cleanup is approximately 70% complete, and there are defined cleanup goals and milestones established to achieve site closure in 2006. U.S. EPA recommends no further pursuit of the actions proposed in the RBES document. If U.S. DOE proposes future changes that may benefit the cleanup process, U.S. EPA recommends following the established process which includes full stakeholder and regulatory involvement.

If you have any questions regarding this matter, please contact James Saric of my staff at (312) 886-0992.

Sincerely,



Gary Schafer  
Chief  
Federal Facilities Section  
SFD Remedial Response Branch #2

cc: Jim Woolford, U.S. EPA-FFRRO  
Jessie Roberson, U.S. DOE  
Johnny Reising, U.S. DOE-Fernald  
Tom Schneider, OEPA-SWDO  
Graham Mitchell, OEPA-SWDO



State of Ohio Environmental Protection Agency  
Southwest District

401 East Fifth Street  
Dayton, Ohio 45402-2911

TELE: (937) 285-6357  
FAX: (937) 285-6249

December 1, 2003

Mr. Robert Warther, Manager  
US DOE Ohio Field Office  
175 Tri-County Parkway  
Springdale, OH 45246-3222

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Dear Mr. Warther:

I am writing you concerning the USDOE Fernald site's Draft Risk-Based End State (RBES) Vision document, which was provided to Ohio EPA as an Executive Summary on November 13, 2003 and upon which a public meeting was held on November 18, 2003. At that public meeting, Ohio EPA was able to obtain a full copy of the document. Based upon our review of the document and the public meeting, Ohio EPA has significant concerns regarding the document and DOE's implementation of its Risk-Based End States policy.

DOE has failed to have any meaningful public or regulatory involvement in the development of the document. Providing the public and regulatory agencies a portion of the document just 2 working days prior to the public meeting does not constitute formulating the vision "...in cooperation with regulators and, in consultation with affected governments, Tribal nations and stakeholders..." as required by DOE Policy P 455.1. In fact, it is our understanding that no change to the document occurred following the public meeting, where adamant opposition was expressed, and prior to submittal to DOE HQ. This leaves one to question what the point of the public meeting was other than to say a meeting occurred. The lack of public and regulatory involvement in this document and its predecessor, the Comprehensive Groundwater Strategy Report, have seriously damaged the productive working relationships between DOE and the regulatory agencies and public. The past two months have seen numerous negative press articles and a growing distrust of DOE in the community. This, after the DOE Fernald site has been seen as a national leader over the past decade in successful stakeholder involvement and productive working relationships between DOE, regulators and the community.

Concerning the specific proposals outlined in the Draft Risk-Based End State Vision, Ohio EPA finds all of the proposals unacceptable. At the Fernald site, DOE, regulators and stakeholders employed a process to evaluate cleanup options based upon risk and community values long before the development of this policy. Additionally, these decisions were reached over years of education, discussion and compromise. To expect the public or regulators to consider changing these agreements based upon a few weeks of internal DOE document development and very limited public involvement is naive, and seemingly ignores all the effort put in by the community, site personnel and regulators over the past 10 years.



Mr. Robert Warther, Manager  
US DOE Ohio Field Office  
Page 2

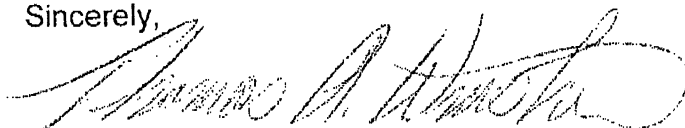
It is important to note that your efforts on the RBES Vision were performed to meet a DOE policy directive and not to satisfy any regulatory requirement of USEPA or Ohio EPA. In that regard it can be viewed as an exercise to help DOE determine if there are any regulatory "opportunities" that should be pursued further. We have always felt that such an evaluation would not bear any significant fruit at Fernald. In comparison to the evaluation and discussion that resulted in current cleanup requirements, this evaluation is anemic in terms of its rigor and devoid of the meaningful regulator and public discussion that produces implementable decisions. The result is a list of potential changes that are all problematic in that they ignore the rich history of decisions at Fernald and fail to recognize the inter-related nature of these decisions. Put simply, it does not appear to be in DOE's best interest to reopen Records of Decisions (RODS) that included extraordinary compromises from the public and regulators.

For all of these reasons, I would suggest that DOE not proceed to propose any changes based on this exercise. To the extent that you have satisfied an internal DOE screening process, you can report that you have completed that task. But, clearly, additional effort put into RBES would not be prudent. Some of your strongest supporters have already begun to question DOE's commitment to truly remediate the site. We have heard a growing perception that DOE is willing to change remedies, leave behind a dirtier site and place additional burdens on the community in order to complete work in 2006. We hope and expect this is not the case.

This is not to say that we will not continue to discuss and act on proposals to improve the cleanup at Fernald. DOE, regulatory agencies and the local community have had a very productive relationship over the past several years. Indeed several Records of Decision have been revised recently to address technical difficulties, improve processes and provide clarification. However, these changes were implemented using the successful public participation and regulatory concurrence model developed and used at Fernald over the past 10 years. Ohio EPA remains committed to working within the bounds of this framework to address site issues as they arise.

Continued work on the RBES Vision will only further distract vital resources and staff from focusing on achieving DOE's 2006 cleanup goal. The process has already cost substantial dollars in personnel time and contractor effort as well as caused damage to the working relationships at the site. Ohio EPA believes it is time to move beyond the RBES Vision exercise and allow the site and community to return their focus to achieving the 2006 goal.

Sincerely,



Thomas A. Winston, P.E.  
Chief, Southwest District Office

cc: Bill Taylor, DOE-FFO  
Jim Bierer, FCAB  
Jim Saric, USEPA Region V  
Jim Woolford, USEPA



## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

DEC 15 2003

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2003 DEC 17 A 10:14

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Tom Winston, Chief  
Ohio Environmental Protection Agency  
Southwest District Office  
401 E. Fifth Street  
Dayton, Ohio 45402

OH-0132-04

Dear Mr. Winston:

This letter is provided in response to your letter of December 1, 2003. In your letter, two key implications were made that, if not clarified, could perpetuate a misconception regarding the Department of Energy (DOE) efforts to achieve risk-based closure at sites under your jurisdiction. The referenced letter implies: (1) the Fernald Risk Based End State (RBES) document is final, and actions to implement the risk-based end state are well underway; and (2) the first exposure of the Ohio Environmental Protection Agency's (OEPA) to this process occurred two days before the November 18, 2003 Fernald public meeting.

As you know, the DOE remains in full compliance with the five Records of Decision (ROD) that govern environmental remediation at the Fernald site, and is legally required to continue to comply with those RODs. If you have concerns regarding DOE's compliance with a ROD, please notify me so that I may take appropriate action.

DOE also fully understands that it cannot unilaterally change any portion of the five RODs. If the public believes DOE can take unilateral action to change the current groundwater remedy at Fernald, then it is apparent that U.S. and Ohio EPA's authority over the DOE is not well understood. If that is the case, DOE and its regulators jointly should work to improve the public's understanding of the regulators' responsibility and authority, as well as the DOE's obligations regarding all RODs. Furthermore, it is important for all to recognize that there is a regulatory process for amending RODs and, where appropriate, the DOE has a fiduciary responsibility to pursue appropriate changes that could result in cost efficiencies without compromising protection of human health and the environment.

As you are aware, the final groundwater strategy at Fernald is a substantial component of the RBES. While it is true that the draft RBES Vision document was submitted in response to DOE Policy No. 455.1, this policy basically formalized work that was already underway at many DOE cleanup sites, including those located in Ohio. The DOE has always looked for methods to decrease cost to the taxpayers while maintaining full protectiveness. The DOE staff initiated discussions with members of your staff regarding risk-based end states at Fernald nearly one year ago. A detailed list of all the interactions between our staffs is included as an attachment to this letter. The list shows more than two dozen contacts with your staff on this subject going back as far as December 2002. I am profoundly troubled that you were not fully aware of the RBES initiative at Fernald following this number of communications with you and your staff.



Mr. Tom Winston

-2-

DEC 15 2003

I find your comment that DOE has not received meaningful public input misleading, in part, because the context in which this statement is made is incorrect. Your letter states that I can "report that {I} have completed that task {of submitting a RBES Vision document to DOE Headquarters}." Unfortunately, the letter's language has created the misperception that the opportunity for the public and the regulator to comment has been missed. As a member of the DOE Environmental Management Advisory Board, as well as a regulator for the State of Ohio who has commented on the draft RBES Policy and Guidance, you are well aware DOE drafted the Ohio RBES document for the express purpose of receiving public and regulator comment. Per the Policy, "sites should provide the draft RBES Vision document to regulators and stakeholders for review and comment at the same time the draft Vision document is submitted to HQ." The Ohio Field Office *exceeded* this requirement because we solicited and received comments from the public *prior* to submitting the draft RBES document to DOE-HQ. However, the Assistant Secretary for Environmental Management has granted the field an extension for submission of the final RBES vision until March 30, 2004 to allow additional time over the next three months for public input.

Your letter further states that all of the RBES vision recommendations are unacceptable, and implementation would lead to a "dirtier cleanup". All Ohio RBES recommendations are compliant with Federal and State regulations. To the extent that Federal and State regulatory limits are adequate, implementation of these recommendations would result in adequate protection of the public and environment, commensurate with anticipated land use. I cannot emphasize enough that under no circumstances would implementation of our RBES recommendations result in a cleanup that is less than fully adequate to protect the public and environment.

Your letter also states that the RBES document cannot be implemented. I agree with this statement, the draft document never was intended to be implemented. The DOE is still in the process of developing and examining alternatives, and is not yet ready to pursue any of those alternatives. Further analysis will be required, and several steps must be taken before any changes at the Fernald site could occur. More specifically, pursuant to DOE Policy 455.1, the following steps must be completed:

1. Incorporate or attach public and regulator comments into the DRAFT document, including the variance report.
2. Submit the final RBES document to DOE Headquarters.
3. Develop a site risk-based end state implementation strategy that includes an assessment of current cleanup strategies and baselines to align them with the end state vision. This is the document that would assess the ability to implement the RBES recommendations. The implementation strategy is anticipated to be complete in the spring of 2004.

Mr. Tom Winston

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DEC 15 2003

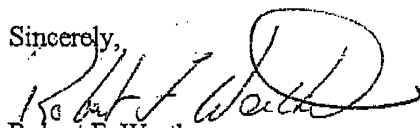
4. Implement changes, as agreed to with the public and regulators. There is no firm date for such action, but under the regulatory process, this cannot be completed until the summer of 2004 at the earliest, and only after detailed discussions with your staff and the public, and completion of any changes to RODs, if required.

Each of the above steps remaining in this process provides an opportunity for public and regulator input. To date, we have not received technical comments on the Fernald RBES regarding risks to human health and environment from the regulator(s) or the public. We have received several comments related to the process used to develop the DRAFT document, and we are fully aware of the history behind the development of each ROD. We will continue to contact OEPA staff directly to ensure that all RBES technical recommendations are fully compliant with Federal and State regulations.

Finally, it is important that our two organizations ensure communications are effective. My staff assures me they are communicating with your designated Site Representative. However, based upon your December 1, 2003 letter and recent comments by your senior staff to the press, it is clear that the issues DOE believes it is communicating are not being received at your level. Therefore, I propose that you and I establish a bi-weekly conference call to discuss topics of importance to the successful completion of the Fernald site. I further propose that we conduct a quarterly walk down of the site.

As we approach closure, it is clear that the frequency and significance of decision-making will increase. I look forward to receiving a favorable response to these two suggestions. Taken together, I am confident that we can achieve a greater mutual understanding of the important issues facing each of our agencies, while providing a vehicle for communicating important matters and positions in a professional and timely atmosphere.

Sincerely,

  
Robert F. Warther  
Manager

Attachment

cc:

Jessie H. Roberson, EM-1  
Michael Owen, LM-1  
William Muno, USEPA  
James Woolford, USEPA  
Graham Mitchell, OEPA  
James C. Bierer, FCAB

**FERNALD GROUNDWATER STRATEGY/ RISK BASED END STATE TIMELINE:**

<b>DATE</b>	<b>EVENT</b>	<b>TOPIC/RESULT</b>
January 2002	Secretary Abraham visits Fernald Site	Discussed top to bottom review of which Risk Based End State (RBES) Vision was part of Master Plan.
December 2002	DOE-HQ rolls out discussion on RBES process	DOE-HQ initiated a complex wide discussion with State Regulators, USEPA, local and tribal governments.
December 18, 2002	Email from DOE-FCP to US and Ohio EPA's	Email to US & Ohio EPA transmitting the RBES policy, guidance, example and questions from Corporate Team #7.
January 2, 2003	Email from DOE-FCP to OEPA	Email informing OEPA that DOE-FCP was responding to a questionnaire from HQ Corporate Team #7 related to RBES and offering to share with OEPA when finalized.
January 2, 2003	Email from OEPA to DOE-FCP	Email requesting to see completed questionnaire and informing DOE-FCP that OEPA would be reviewing the RBES policy for ITRC.
January 3, 2003	Email from OEPA to DOE-FCP	Email from OEPA to DOE-FC transmitting letter from EM-1 to the ITRC asking for review and comments on the RBES guidance.
January 7, 2003	Email from Fluor Fernald to OEPA	Email transmitting completed Corporate Team #7 questionnaire.
January 22, 2003	Full FCP-CAB Mtg	FCP-CAB briefed on RBES policy and guidance. Comments requested on documents by January 31, 2003.
March 29, 2003	Contract Mod. 38 signed	Includes requirement for Fluor to submit Comprehensive Groundwater Strategy (CGS) within 60 days of contract award
April 10, 2003	Meeting with OEPA	Representatives of DOE-FCP and Fluor Fernald briefed OEPA staff on Mod. 38, including CGS.
May 2003	Conference Call with USEPA	Representatives of DOE-FCP and Fluor Fernald briefed USEPA on Mod. 38, including CGS.
June 4, 2003	Meeting between DOE and Fluor	Fluor briefs DOE on status of CGS contract deliverable. DOE agrees to extension of time for submittal of document to June 30 <sup>th</sup> .
June 10, 2003	Fernald Weekly Report	First use of term "preferred alternative". Used in CGS context that DOE's general preference was to D&D the Advanced

12/12/2003

		Waste Water Treatment Plant (AWWT) on a schedule that allowed disposing of it in the On Site Disposal Facility (OSDF). Protocol is for Fernald to fax copies of weekly reports to the Fernald Citizens Advisory Board (FCAB) members, which includes US and Ohio EPA.
June 11, 2003	Weekly Report fax'd to FCAB members	
June 19, 2003	Email from OEPA to FCP-CAB	Advises that OEPA does not support DOE CGS proposal, and states OEPA was not aware of this action.
June 19, 2003	Telecon between DOE-FN and USEPA	DOE informs USEPA we do not have a CGS preferred alternative, all options were being evaluated, and the report was due June 30 <sup>th</sup> .
June 30, 2003	Comprehensive Groundwater Strategy submitted to DOE	Contractual deliverable met.
July 15, 2003	DOE Policy 455.1 approved	DOE Policy on "Use of Risk-Based End States" approved by the Deputy Secretary of DOE.
July 21, 2003	Meeting between DOE and Fluor on CGS	Discussion of DOE comments on June 30 <sup>th</sup> CGS document.
August 8, 2003	Meeting between DOE and USEPA Region V in Chicago	Discussion included DOE groundwater optimization initiative
August 14, 2003	Full FCP-CAB Mtg.	CAB members received updated RBES Policy Guide and Implementation Plan.
August 22, 2003	DOE letter to Fluor pertaining to CGS	Transmitted comments on June 30 <sup>th</sup> CGS document, and requested additional information on selected alternatives identified in CGS.
August 28, 2003	Meeting between DOE and Fluor related to CGS	DOE clarified its 8/22 request for additional information related to CGS.
September 8, 2003	Letter to FCP-CAB from DOE-FCP	Letter to CAB from DOE-FCP Acting Director transmitting FY 2004 Priorities. Included was the statement "Facilitate a public discussion on DOE's RBES policy and provide input to DOE on incorporating the RBES policy at Fernald".
September 10, 2003	Meeting between DOE, Fluor and OEPA in Dayton, OH related to CGS.	Various topics discussed. OEPA expressed lack of support for any alternative that would raise discharge limits contained in Record of Decision for Operable Unit 5 at Fernald.

12/12/2003



September 11, 2003	Fluor letter to DOE related to CGS.	Responded to 8/22 request for additional information on CGS.
September 13, 2003	FCAB Annual Retreat	Groundwater Strategy initiative discussed. DOE commits to briefing for the FCAB in October on this subject. At the Annual FCP-CAB Retreat the DOE-FCP Acting Director discussed and reiterated the request for the CAB to facilitate public input on the RBES Policy at FCP.
Week of Sept. 14, 2003	Copy of the CGS Report provided to Lisa Crawford (at her request)	First external distribution of initial CGS report. Report still considered internal working draft.
September 16, 2003	Meeting between Fluor representatives and USEPA in Chicago	Various topics discussed, including need for regulatory "summit meeting" for DOE presentation on groundwater initiatives and informal regulator reactions prior to development or submittal of any formal proposal by DOE to alter current groundwater remedy.
September 22, 2003	Lisa Crawford calls DOE and Fluor public information contacts	Wanted information on "preferred alternative" for CGS.
September 24, 2003	Fluor meets with Lisa Crawford at her request (lunch meeting)	Provided copy of talking points related to RBES and CGS which included the term "preferred alternative"
September 25, 2003	Telecon between DOE, OEPA, and USEPA	DOE told regulators that the document had been provided to Lisa Crawford, and that a copy of the document and talking points would be provided to them.
September 25, 2003	Telecon between Fluor and FCAB Facilitator	Informed Facilitator of meeting held with Lisa Crawford. Provided him a copy of the talking points via e-mail.
September 26, 2003	Comprehensive Groundwater Strategy Report and the Risk-Based End State Overview talking Points sent to US and Ohio EPA.	The talking points used to brief Lisa Crawford related to the RBES process and initiatives/opportunities were sent to both US and Ohio EPA along with the Comprehensive Groundwater Strategy Report. This brings regulators, FCAB, and key stakeholders to a consistent level of documentation on this subject.
September 26, 2003	Cincinnati Enquirer reporter called Fluor public affairs office	Inquired about Silos Project safety stand down. Also requested information on Groundwater Strategy Report and preferred alternative. Fluor informed the reporter that there was no preferred alternative---only an internal report that identified options.

September 29, 2003	Enquirer reporter calls DOE-Fernald.	DOE informed him that a range of options was being considered; there was no CGS preferred alternative; and we would use a public process to evaluate options and develop a path forward.
October 8, 2003	Meeting at stakeholder residence between DOE, Fluor, and key stakeholders	Briefed key stakeholders on background of groundwater strategy report, and discussed options and path forward. Emphasized there was no "preferred alternative", and committed to a public meeting to discuss the entire matter.
October 9, 2003	Meeting between DOE and three OEPA representatives in Miamisburg, Ohio	OEPA firmly states the groundwater initiative is "dead on arrival". No support for concept—particularly changing of discharge limits.
October 17, 2003	Meeting between DOE, Fluor, USEPA and OEPA in Dayton, OH	Regulatory Summit held. Both USEPA and OEPA stated they would not agree to any changes in discharge limits. However, they were amenable to discussions on timing of appropriate disposition of the AWWT and ultimate groundwater certification approach to declaring completion of remedy. Brief discussion on RBES vision document (averaging Waste Acceptance Criteria in OSDF).
October 21, 2003	Public Meeting held at Fernald Site on CGS.	Attended by 54 people, including USEPA, OEPA, FCAB, Ohio Dept. of Health, media representatives, area residents, and other key stakeholders. DOE asked for an opportunity to start the process over, and more effectively involve the public in the entire matter. Fluor presented information on history of the issue and the alternatives contained in the June 30 <sup>th</sup> report.
October 21, 2003	FCAB meeting held immediately following public meeting	Path forward agreed to, whereby DOE would use the FCAB as the primary conduit to frame the issue for the public, and facilitate an open process to discuss alternatives related to the CGS and decide upon appropriate path forward—including any potential concerns regarding any proposals emerging from DOE implementation of Risk Based End State Policy (DOE 455.1)
November 14, 2003	Email sent to FCP-CAB mailing list related to RBES	Email sent to the CAB transmitting the Executive Summary of the RBES Vision Document.
November 18, 2003	Public Meeting pertaining to RBES Vision Document	Public Meeting held at FCP to present the Draft RBES Vision Document. Full copy of RBES Vision document distributed to

12/12/2003

November 21, 2003	FCP RBES Vision Document transmitted to EM-1	attendees. Draft FCP RBES Vision document transmitted to EM-1. Summary of Comments received at Public Meeting and newspaper articles attached.
November 25, 2003	Email from DOE-FCP to US and Ohio EPA	Email sent to US and Ohio EPA informing them that the RBES Vision Document had been posted on the WEB Site. Provided site name and password for access.
November 25, 2003	Email from CAB facilitator to FCP-CAB	Email sent from CAB facilitator to CAB transmitting draft letter to EM-1 from FCP-CAB relating to RBES vision document.
November 25, 2003	Meeting with OEPA at Dayton Office	Representative from Fluor Fernald, Inc. and DOE-FCP met with OEPA to discuss the RBES HQ review process and path forward.
December 2, 2003	Full FCP-CAB Meeting	Full CAB meeting held, topics discussed included RBES vision document, comments and path forward. The Comprehensive Groundwater Strategy path forward was discussed. In was agreed that the CAB would review and evaluate various alternatives primarily related to the dispositioning of the AWWT.

12/12/2003



State of Ohio Environmental Protection Agency  
Southwest District

401 East Fifth Street  
Dayton, Ohio 45402-2911

TELE: (937) 285-6357  
FAX: (937) 285-6249

January 6, 2004

Robert Warther, Manager  
U.S. DOE Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

Dear Mr. Warther:

This is in response to your letter dated December 15. My purpose is to briefly restate Ohio's position on DOE's Risk Based End State (RBES) approach at Fernald and also provide clarification on a couple of points in your letter. Since we seemingly have different perspectives on what has transpired on this project, my primary focus is on where we go from here.

In terms of our position, let me offer the following background. When I toured the Fernald site in August, 2003, I was amazed at the progress that was occurring on the cleanup. After being involved with this site since the late 1980's, it was a pleasure seeing the significant cleanup efforts that were underway. To date almost 70% of the site is cleaned up! My staff informs me that even more progress has occurred since my August tour. These successful results are the product of DOE building successful working relationships with contractors, regulators, and stakeholders over at least the past ten years. During this process all parties were educated in the technical, economic and political issues associated with the cleanup challenges at Fernald and all parties have made compromises in developing the cleanup plans that are currently being implemented.

I see Ohio's position as relatively straightforward. At this late point in the cleanup, it just does not make sense for DOE, the regulators and stakeholders to spend valuable time and resources to do additional studies on alternatives for the Fernald cleanup that, in reality, have no time to be implemented. The time for studies has passed and now is the time to focus on meeting DOE's stated 2006 goal to safely complete the cleanup.

I did want to address a couple of points in your letter. One was your perspective that I was not fully aware of the RBES initiative. Let me assure you, Ohio EPA staff involved with the Fernald cleanup has kept me fully informed on this issue. While we were aware that work was ongoing on this project, our concerns about the level of consultation, cooperation and deliberation still stand. You do correctly point out that I am very familiar with the RBES policy and guidance development through my national involvement with the Environmental Management Advisory Board (EMAB), the State and Tribal Government Working Group (STGWG), and the National Governors Association (NGA). In that capacity I have



Robert Warther, Manager  
U.S. DOE Ohio Field Office  
January 6, 2004  
Page 2

provided input on numerous occasions on many related issues, including how difficult it would be to superimpose the RBES process on sites like Rocky Flats, Fernald and Mound which are nearing cleanup completion.

Further, I have pushed hard at the national level for DOE to work collaboratively with regulators, local governments and the public and to exercise leadership in determining which cleanup plan changes to actually put forth. I even provided a list of factors which DOE should consider in making that decision. To DOE's credit, that list was made a part of the Draft RBES Implementation Plan. While I understand the goal of the RBES exercise, I have repeatedly voiced concerns about the potential damage that this process could have on working relationships at the site level and on the forward progress that DOE, the Congress, the regulators and the public have been successfully striving to achieve. I believe this is especially true at sites like Fernald where we are nearing the finish line.

I appreciate your comments that the document is just a draft, and even when final, does not constitute a change in clean-up requirements. We certainly concur. However, in that the proposals have received a negative response from US EPA, Ohio EPA and the public, implementation within the 2006 time frame is unrealistic. I hope there is an appreciation within DOE that the RBES "opportunities" presented are significant departures from the decisions that were made through a robust and collaborative process and that any change could only come out of a similar process. As stated in your RBES report, a step that you will need to take is to "arrive at the shortlist of implementable ideas." Given timing, reaction of the regulators and the public and the daunting task of revisiting hard-fought compromises, we believe that none of the RBES opportunities should be carried forward to the "shortlist". Since we strongly believe this to be the case, we do not intend to offer detailed comments on the proposals, and feel that to do so would only distract all parties from our 2006 challenge.


I did want to restate that we continue to be willing to engage in discussions and act on proposals to improve the cleanup at Fernald through inter-agency technical discussions and collaboration with stakeholders. For example, the Fernald Citizens Advisory Board has agreed to consider the question about what is the appropriate long term infrastructure to leave in place to treat contaminated ground water and leachate. While we have stated that not providing treatment is unacceptable, there may be infrastructure changes that would be acceptable. We see discussions on this issue as a worthwhile investment that could again yield a significant improvement to the Fernald cleanup. I do need to mention that the continuing backdrop of RBES proposals, especially those related to ground water treatment, could hamper these discussions. However, this type of collaborative approach between DOE, regulators and stakeholders is the way we have discussed potential changes to the Fernald cleanup in the past and this approach has served everyone well.

I am open to working toward improved communication and am agreeable to your idea of a bi-weekly conference call. In those discussions, I will continue to underscore the long history of successful, collaborative decision-making that has occurred at Fernald. With the

Robert Warther, Manager  
U.S. DOE Ohio Field Office  
January 6, 2004  
Page 3

perspective of over 15 years of involvement at this site, I know only too well the challenge of reaching implementable decisions and the level of trust and communication that is needed for such achievement. Our goal will be to continue to work within such a framework.

Sincerely,

  
Thomas A. Winston, P.E.  
Chief, Southwest District Office

TAW/bjc

cc: Jessie H. Roberson, EM-1  
Michael Owen, LM-1  
William Muno, USEPA  
James Woolford, USEPA  
James C. Bierer, FCAB  
Graham Mitchell, OEPA  
Tom Schneider, OFFO



## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

JAN 23 2004

Tom Winston, Chief  
Ohio Environmental Protection Agency  
Southwest District Office  
401 E. Fifth Street  
Dayton, Ohio 45402

OH-0184-04

Dear Mr. Winston:

I very much appreciate your January 6<sup>th</sup> response to my letter concerning the cleanup at the Fernald site, and your comments regarding the progress that has taken place at Fernald. I believe Fluor Fernald deserves a large part of the credit for the progress being demonstrated. Since your last site visit in August 2003, Fluor has performed very well. They finished the year on track or ahead of all waste disposal goals, and safety performance has improved markedly since your visit. The injury rate as measured by the OSHA recordable case rate is about one-half what it was two years ago, and nearly an order of magnitude better than industry standards. The Silos project continues to be on the critical path for closure and, while not as far along as we would like, good progress continues. Fluor is in the process of completing systems testing for Silo 3 prior to startup of those operations.

I appreciate the willingness of you, and others, to engage in discussions concerning potential infrastructure changes regarding Fernald groundwater treatment. As discussed in our recent phone conversation, there may be an avenue to remove this topic from the backdrop of the Risk Based End State (RBES) process. I look forward to working collaboratively with your agency, Federal regulators, the Fernald Citizens Advisory Board (FCAB), and other interested stakeholders to further refine that concept into yet another step toward significant improvement to the Fernald cleanup.

Toward that end, I believe you and I should lead an effort to re-establish communications on a variety of important topics at Fernald. In so doing, I am not proposing to circumvent any other organizations with interests in the Fernald mission. Rather, I envision such collaborative discussions as being an important initial effort toward identifying an agreed upon framework for moving forward and addressing these topics.

As a first step, I propose we mutually develop a topical agenda, convene a "summit" meeting of key personnel from appropriate organizations, and outline a path forward for achievement of implementable decisions for both the Fernald and Mound Closure Projects. In short, I want to reach clear agreement on the specific process to be used in addressing these issues, and I want this process to be inclusive, participatory and public. Once that process is agreed upon, our staffs will have a clear roadmap to utilize, and can then focus on technical issues and their ultimate resolution. You and I, and others as appropriate, would act as a "steering committee" to remove any obstacles to progress and keep the focus on issue resolution.



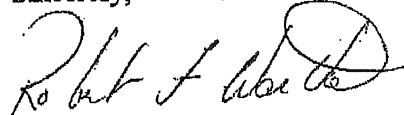
Tom Winston

-2-

JAN 23 2004

I look forward to your views on this proposal, and trust that it meets with your approval.  
I welcome any other suggestions you may have to make this effort more successful.  
Please call me at your earliest convenience to discuss this matter further.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert F. Warther".

Robert F. Warther  
Manager

cc:  
See Attached



cc:

Jessie H. Roberson, EM-1

Rick Dearborn, CI

Steve Chabot, House of Representatives (Local)

David Hobson, House of Representatives (Local)

Rob Portman, House of Representatives (Local)

Michael Turner, House of Representatives (Local)

James Bierer, FCAB

Mayor Dick Church, City of Miamisburg

Sharon Cowdrey, MESH

Lisa Crawford, FRESH

Mike Grauwelman, MMCIC

John Weithofer, City of Miamisburg

Margaret Marks, OH/MCP

Bill Taylor, OH/FCP

Dewain Eckman, OH/MCP

Johnny Reising, OH/FCP

Gary Stegner, OH/FCP



December 3, 2003

The Honorable Jessie Hill Roberson  
Assistant Secretary for Environment Management  
Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0104

Dear Ms. Roberson:

We are writing to ask that you relieve Fernald of the obligation to continue with Risk Based End States (RBES) activities at the Fernald site. The RBES policy recognizes that it might not apply to all sites, and we strongly believe that it should not apply to Fernald. Our decisions at Fernald have been based on a risk-based end state and we are so far along in implementing these decisions that we believe that the most prudent course is to allow us to return our full focus to a responsible and safe cleanup.

In general, the FCAB supports the idea of risk-based end use planning. In fact, we embraced this planning ten years ago when we provided the DOE with recommendations regarding the future use and specific cleanup levels for the site. Our July 1995 recommendations were based on detailed and exhaustive deliberation of land uses and risk levels. We ultimately decided that it was in the best interests of the country that Fernald take a balanced approach to cleanup based on specific land uses, risk levels, and disposal locations. This was a far cry from the cleanup to background that most of the community had been insisting upon up to that time. Our recommendations, which were adopted in full by DOE and its regulators and resulted in the following:

- Selecting on-site disposal for 77 percent of Fernald's waste volume, and recommending the construction of an on-site disposal facility, greatly reducing costs of disposal and the risk of waste transport
- Basing on-site soil cleanup levels on an undeveloped park end state and what was necessary to protect the Great Miami Aquifer, a sole source drinking water aquifer
- Setting off-site risk levels at  $10^{-5}$ , which eliminated all off-site excavation of the 11 square miles of land that had been contaminated by the Fernald site and saving over \$4 billion
- Allowing extensive on-site excavation of contaminated soils and cell liner material without backfilling or the importation of expensive topsoil
- Recommending that all cleanup be accelerated to achieve completion within 10 years, saving over \$2 billion from the existing estimates.

As can be seen from this list, the Fernald community not only understands risk-based end use planning, we did it before any of the other sites in the DOE complex were even getting started. Our five final RODs are almost a decade old, and implementation of Fernald cleanup is about 70 percent complete. These RODs were the result of comprehensive dialogue and debate and are based on the FCAB's 1995 recommendations. Every decision was carefully considered. While most require DOE to do far less than return the site to its pre-Cold War condition, some clearly go beyond the legal minimum. This was seen as a reasonable tradeoff to the billions of dollars of savings and the siting of a 100-acre radioactive waste disposal

*Chair*  
James C. Bierer

*Vice Chair*  
Lisa Crawford

*Members*  
M. Kathryn Brown  
Sandy Butterfield  
Marvin W. Clawson  
Lisa Crawford  
Stephen P. Depoe  
Louis Doll  
Pamela Dunn  
Jane Harper  
Robert G. Tabor  
Gene E. Willeke

*Ex Officio Members*  
L. French Bell  
Gene Jablonowski  
William Taylor  
Graham Mitchell

*Support Staff*  
The Perspectives Group

Ms. Jessie Hill Roberson  
December 3, 2003

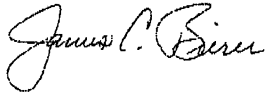
facility in the middle of a residential community and on top of a sole source drinking water aquifer. To suggest now, as the current RBES document does, that the community and regulators should provide DOE with additional concessions and accept a higher risk without any compensation does not make sense.

To ask the site to revisit these decisions at this time is not only harmful to the careful balance of interests represented by the site's cleanup decisions, it is causing a serious waste of resources and diverting important attention from our cleanup mission. The site has already spent hundreds of senior manhours and \$70,000 in subcontractor costs on the RBES exercise. Thus far, implementation of the RBES policy at Fernald has further strained already damaged relationships with the public and regulators. As was clearly demonstrated in the public meeting of November 18, any of the RBES recommendations that return to Fernald from this process will be soundly rejected by both the public and regulators and result in even greater use of time and resources. In addition, the time it would take to approve and implement any of these decisions does not appear to make sense within the confines of the target closure date of December 2006.

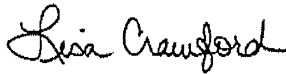
For the past ten years, the Fernald site has been recognized as a model of stakeholder participation and collaborative decision-making. We gained this reputation because a lot of people worked extremely hard to do things the right way. This approach has worked for a long time and has resulted in a site that is very near completion with strong stakeholder and regulator support. As part of that process, we have dealt with many changes that were brought about through need and innovation. We did this with foresight, detailed technical evaluation and full participation. The RBES process has not followed this pattern.

The RBES policy recognizes that it might not apply to all sites, and certainly it is not applicable to Fernald. In the best interests of the site and its stakeholders, we are requesting at this time that you relieve Fernald of the obligation to continue with RBES and allow us to return our full focus to a responsible and safe cleanup. We urge that you act quickly before additional expenses are incurred.

Sincerely,



James C. Bierer  
FCAB Chair



Lisa Crawford  
FCAB Vice-Chair

cc:  
Senator Mike DeWine  
Senator George Voinovich  
Representative John Boehner  
Representative Steve Chabot  
Representative David Hobson  
Representative Rob Portman  
SSAB Chairs  
Bob Warther



Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

DEC 15 2003

*Copy to*  
*Don L*  
*John S*  
*12/30/03*  
*SRB*  
*he*

Mr. Todd Portune  
Board of Commissioners  
County Administration Building  
138 E. Court Street, Room 603  
Cincinnati, Ohio 45202

OH-0129-04

FILE: 2003 DEC 17 A 10:14  
OG 12-08-03  
FERNALD

Dear Mr. Portune.

This letter is in response to your telephone call to me last Friday, December 5, 2003. It is my understanding that your concern centers on the local press coverage that implied the Department of Energy (DOE) was unilaterally modifying existing Records of Decision (ROD) relating to the clean up of the Fernald Closure Project (FCP).

As I stated during that call, DOE has initiated a complex-wide initiative to prepare Risk Based End State (RBES) Vision documents that ensure each closure project's cleanup effort is driven by clearly defined, risk-based end states. This initiative is, in fact, a more formal implementation of an initiative started by the DOE in December 2002. As we discussed, the Fernald Closure Project has prepared a draft document that defines all technically supportable, risk-based opportunities for consideration. All recommendations fully comply with federal and state regulations. This document represents the beginning of a process that has, and will continue to involve the public and the regulators. The DOE RBES initiative (which includes the comprehensive ground water strategy) cannot unilaterally impose changes to the Fernald cleanup waste acceptance criteria. Should any changes be proposed that would modify the Fernald cleanup, DOE must follow the nation's environmental laws and regulations and the due process defined by those laws.

As we assess the miscommunication surrounding the RBES initiative, we are once again preparing focused, intense communication plans to reach all involved in the Fernald cleanup. To that end, I would like to schedule a briefing for you and the other commissioners to clearly define the approach we are using.



Mr. Todd Portune

-2-

DEC 15 2003

I have assigned a new Director to the Fernald Closure Project, William J. Taylor, who will call you in the next few days to arrange a time and place for the informational briefing. Should you have any further questions, please feel free to call me at (513) 246-0018 or Mr. Taylor at (513) 648-3101.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert F. Warther". The signature is stylized with a large, circular flourish at the end.

Robert F. Warther  
Manager

cc:

Jessie H. Roberson, EM-1  
William Muno, USEPA  
Tom Winston, OEPA  
J. S. Dowlin, Hamilton County,  
Board of Commissioners  
P. Heimlich, Hamilton County,  
Board of Commissioners



**Department of Energy**  
**Ohio Field Office**  
**Fernald Environmental Management Project**  
**P. O. Box 538705**  
**Cincinnati, Ohio 45253-8705**  
**(513) 648-3155**



January 9, 2004

DOE-0098-04

Distribution:

**RISK BASED END STATE VISION**

Since December 2002, the Department of Energy (DOE) has undertaken a complex-wide discussion and interaction with Federal and State regulators and other interested stakeholders pertaining to the Risk Based End States (RBES) process. DOE Policy 455.1, "Use of Risk Based End States", was issued in July 2003. For Fernald, within the jurisdiction of the Ohio Field Office (OH), seven formal and various informal interactions, including public meetings, have been held in an attempt to obtain public input on site Draft RBES Vision process. We have received initial written comments from the U. S. Environmental Protection Agency (U. S. EPA), the Ohio Environmental Project Agency (OEPA), and the Fernald Citizen Advisory Board (FCAB). Informal verbal comments have been received from the Fernald Residents for Environment, Safety and Health (FRESH), and the Public. Congressional interest has also been demonstrated. All such interactions are integral to the rigor and intent of the RBES process. We are particularly interested in receiving technical comments related to regulatory compliance and risk aspects of the proposed RBES alternatives contained in these draft documents.

The RBES is not a decision document, and DOE recognizes that many of the alternatives being evaluated would require changes to existing regulatory agreements. If DOE ultimately decides to seek changes to current compliance agreements, decisions or requirements, such changes must be made in accordance with applicable requirements and procedures.

The Assistant Secretary for Environmental Management (EM-1) has provided an extension of the submittal date for draft RBES Vision documents until February 1, 2004, and final RBES Vision documents until March 30, 2004. In order to allow the Fernald Closure Project (FCP) to appropriately consider all public comments in their submittals, I am once again soliciting your input on these documents. Accordingly, please provide any major specific comments no later than January 20, 2004, and any detailed technical comments no later than March 15, 2004. Our intent is to attach all comments received as part of the FCP RBES Vision document submittals to DOE HQ. We will address these comments, as appropriate, including the potential modification or elimination of alternatives included in the documents, and attempt to resolve all comments received.

In order to provide maximum availability for review and comment, the OH webpage ([www.ohio.doe.gov/RBES.asp](http://www.ohio.doe.gov/RBES.asp)) contains links to the current versions of the OH sites Draft RBES Vision documents including the FCP. In addition, a photocopy of the current version of the FCP Draft RBES Vision document is enclosed. We anticipate submitting a revised FCP Draft RBES Vision document by February 1, 2004 and the final by March 30, 2004. These updated versions will be placed on the OH webpage.

If you have any questions regarding this matter, please contact me at 513-648-3101.

Sincerely,

  
William J. Taylor  
Director

Enclosure: As Stated

cc w/o enclosure:

R. Warther, DOE-OH  
J. Craig, DOE-OH  
G. Griffiths, DOE-OH  
S. Smiley, DOE-OH  
D. White, DOE-OH  
B. Taylor, DOE-FCP  
D. Kozlowski, DOE-FCP  
J. Reising, DOE-FCP  
G. Stegner, DOE-FCP

#### DISTRIBUTION LIST:

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Remedial Project Manager  
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77 West Jackson Boulevard  
Chicago, IL 60604-3590

Mr. Thomas Winston, Chief  
Ohio Environmental Protection Agency  
Southwest District Office  
401 East 5<sup>th</sup> Street  
Dayton, Ohio 45402

Pam Dunn, FRESH  
7781 New Haven Road  
Harrison, Ohio 45030

Edwa Yocum, FRESH  
9850 Hamilton Cleves Pike  
Harrison, Ohio 45030

Steve Depoe  
Department of Communications  
University of Cincinnati  
P. O. Box 210184  
Cincinnati, Ohio 45221-0184

Dr. M. Kathryn Brown  
5137 Salem Hill Lane  
Cincinnati, Ohio 45230

Lou Doll  
6595 Bridgetown Road  
Cincinnati, Ohio 45248



January 12, 2004

Mr. Gary Stegner Public Affairs  
U.S. Department of Energy  
Fernald Facility  
P.O Box 5387055  
Cincinnati, OH 445253-8705

Subject: Comments to the Risk Based End States of Fernald facility.

Dear Mr. Gary Stegner,

NO changes in groundwater discharge requirements.  
NO to ROD amendments

This RBES is a cost driven technical vision with selected alternatives that will impact ground water remedial strategy alternatives. Having results of minimal protection of the Human health, environment and an economic risk to the community. The economic risk is caused by a real or perceived risk to human health and environment. The economic value of the river to the surrounding communities would be limited.

DOE is turning its back on the second important part of the cleanup project the Aquifer, and groundwater. People living near the contaminated south plume still use private wells.

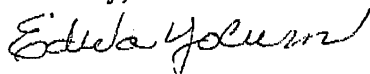
The Great Miami Aquifer is part of the life blood of the earth. The aquifer must be cleaned to the standard 30 ppb. DOE must continue treating contaminated water before released into the Great Miami River. NO reason to change discharge requirements. I suggest that DOE look into constructing a smaller groundwater treatment plant that will meet the current discharge requirements. I believe this alternative would not call for a ROD amendment.

The leachate from the OSDF cells with temporary caps must be treated.

The community sees risk as reality and will live with the assumptions and uncertainties of the technology used. Risk is also trust. In 1990 involved stakeholders worked towards an END STATE using a balance approach resulting in an OSDF over the Great Miami Aquifer and saving U.S. DOE billion in clean up costs.

In 1996 the stakeholders, Contractor and DOE spent many hour attending meetings developing the "end state" of the site. Therefore I believe the recent RBES activities should be discontinued at the Fernald facility.

Sincerely,



Edwa Yocum  
9860 Hamilton Cleves Pk.  
Crosby Townshp.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

SR-6J

REPLY TO THE ATTENTION OF.

JAN 20 2004

Mr. Robert Warther  
United States Department of Energy  
Ohio Field Office-Springdale  
175 Tri-County Parkway  
Cincinnati, Ohio 45246

RE: RBES: Fernald and Mound

Dear Mr. Warther:

The United States Environmental Protection Agency has reviewed the United States Department of Energy (U.S. DOE) January 9, 2004, letters requesting comments on the Risk-Based End State vision (RBES) document for the Mound site and the RBES vision document for the Fernald site. U.S. EPA understands the need for the Sites to proceed with the RBES process, as it is required by a U.S. DOE policy issued in July 2003.

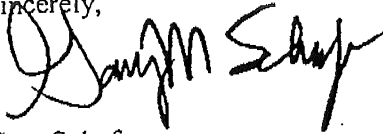
On November 26, 2003, I submitted a letter to you expressing U.S. EPA's position on the RBES for the Fernald site. Since that time there have been several discussions between U.S. DOE and U.S. EPA regarding the RBES document and process for the Fernald site. However, U.S. EPA's position has not changed, as U.S. EPA does not support any of the proposed items in the RBES vision document. Tremendous progress has been made at the Fernald site, and the path forward to closure of this site is clear. 2004 represents the largest and most complicated construction season, to date, for the Fernald site. U.S. EPA would like to continue to assist U.S. DOE in meeting the 2006 site closure date, and believes it is best that all resources are focused on achieving that goal rather than the RBES process.

The U.S. DOE Mound site is in a similar position as that of Fernald in that much progress has been made at the site, and it is also on track for a 2006 closure. Also, the city of Miamisburg is involved in acquiring much of the property, which impacts future land use decisions. Although no remedy decisions or changes can be made without U.S. EPA approval, there is a concern that the RBES document for the Mound site may be pre-judging remedies and indirectly circumventing the CERCLA process. The recommendations, particularly for groundwater, suggest Monitored Natural Attenuation (MNA) as a preferred path forward. We believe that these recommendations are premature at this point. U.S. EPA can not support MNA at the Mound site without further analysis pursuant to the CERCLA process. Further, in regards to Operable Unit 1, U.S. EPA wants the technical team to complete its analysis before any future decisions are made. The RBES appears to be presenting remedy decisions before work is

completed. Therefore, U.S. EPA does not support the recommendations presented in the RBES document for Mound. U.S. EPA requests that all efforts be focused on jointly achieving the 2006 closure date and following the CERCLA process.

If you have any questions regarding this matter, please contact James Saric of my staff at (312) 886-0992.

Sincerely,



Gary Schafer  
Chief  
Federal Facilities Section  
SFD Remedial Response Branch #2

cc: Jim Woolford, U.S. EPA-FFRRO  
Jessie Roberson, U.S. DOE  
Johnny Reising, U.S. DOE-Fernald  
Tom Schneider, OEPA-SWDO  
Graham Mitchell, OEPA-SWDO  
Brian Nickel, OEPA-SWDO  
Margaret L. Marks, U.S. DOE-Mound  
William J. Taylor, U.S. DOE-Fernald



## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

JAN 23 2004

Mr. Gary Shafer  
Chief, Federal Facilities Section  
SFD Remedial Response Branch #2  
USEPA Region 5  
77 West Jackson Boulevard  
Chicago, IL 60604-3590

OH-0183-04

Thank you for your letter of January 20, 2004, concerning the Draft RBES Vision Documents for the Mound and Fernald Closure Projects. The Department will continue to involve USEPA, Ohio EPA and the public as RBES alternatives are investigated and evaluated.

As you are aware, the Ohio Field Office is required to continue to proceed with the RBES process. A final RBES document is scheduled for submittal to HQ by 3/31/04. I am committed to continue to work with regulators and stakeholders from both Mound and Fernald in evaluating reasonable risk-based alternatives and finalizing the document. As outlined in our letter of January 9, 2004 we would like any technical comments USEPA may have concerning the RBES alternatives by March 15, 2004. You have made your program position very clear. However, we have not received any technical comments, and we believe that each of the proposed RBES alternatives are technically sound and defensible in addition to being environmentally protective. If USEPA wishes not to provide any additional technical comments we will continue to include you on the distribution for all applicable RBES documents and information.

Also, as I have stated to the regulators and to the public, the RBES documents are not decision-making documents. Any change to a Record of Decision, or other approved regulatory document would require the department to follow the applicable regulatory process and obtain the necessary regulatory approvals. At this time in the RBES process, the Department has not proposed any changes, pre-judged any of the remedies, nor developed a preferred path forward.

I'll continue to work with you and your staff as we accelerate cleanup and reduce risk, and we work toward closure in 2006.

Sincerely,

Robert F. Warther  
Manager

cc:  
See Attached



cc:

Jessie H. Roberson, EM-1

Rick Dearborn, CI

Steve Chabot, House of Representatives (Local)

David Hobson, House of Representatives (Local)

Rob Portman, House of Representatives (Local)

Michael Turner, House of Representatives (Local)

James Bierer, FCAB

Mayor Dick Church, City of Miamisburg

Sharon Cowdrey, MESH

Lisa Crawford, FRESH

Mike Grauwelman, MMCIC

John Weithofer, City of Miamisburg

Margaret Marks, OH/MCP

Bill Taylor, OH/FCP

Dewain Eckman, OH/MCP

Johnny Reising, OH/FCP

Gary Stegner, OH/FCP

# F.R.E.S.H., Inc.

Fernald Residents for Environmental Safety and Health

January 23, 2004

Gary Stegner, Public Affairs  
USDOE, Fernald Office  
P.O. Box 538704  
Cincinnati, Ohio 45253

Sent Via Fax

Dear Mr. Stegner:

Below are FRESH Inc.'s comments on the FCP - RBES Vision document. As you are aware, many FRESH members have followed the RBES process through these last few months. It is our opinion that there has been minimal stakeholder participation and the comment periods have been short and have fallen over three major holidays - Thanksgiving, Christmas & New Year's! In addition there was only one public meeting regarding RBES.

FRESH believes that the Fernald Site is too far along in the cleanup process to go through any changes at this time. Our Records of Decision already reflect what "we" have all agreed to. If at any time DOE wants to change anything, then we believe the ROD or ESD process is the appropriate avenue to go through.

We do not want to change anything. We expect DOE to honor its legally binding agreements. If DOE chooses to alter these agreements, we will explore other options.

## SPECIFIC COMMENTS:

### Executive Summary Section

Page 1 - Paragraph 7 - RBES was not congressionally mandated. This is an untrue statement.

Page 2 - Paragraphs 4 & 6 - Both of these paragraphs inaccurately portrays the reality of the situation. They should be removed from the document

Hazard Area 1 - NO!!! - The WAC is it - no averaging will be done!!  
- All leachate will be tested & treated as agreed upon.  
- Remains as is per signed ROD & Agreements

Hazard Area 2 - NO!!! - All must remain as is per signed ROD & Agreements  
- FRL's will remain the same  
- No CPRG's

P.O. Box 129 - Ross, Ohio 45061-0129

Hazard Area 3 - NO!!! - All must remain as is per signed ROD & Agreements

- Groundwater Treatment remains the same
- No changes in discharge numbers

Hazard Area 4 - NO!!! - All must remain as is per signed ROD & Agreements

- New and old outfall lines, dams & structures must be removed as per the ROD


We believe there is no benefit to us or the Fernald Site with regard to any of these RBES changes. Cost should not be the driving factor. These changes would result in a dirtier clean up!!! Re-opening anything at this point in time would be like opening "Pandora's box". DOE should live up to the agreements which were made with extensive public participation.

We have worked long and hard to come to agree on the FCP Clean Up decisions. We should not have to change that now. We do not accept the RBES and will not agree to it. We stand behind our Records of Decisions (ROD's) and the legally binding clean up agreement made with our regulators.

We are in agreement with the comments that have been provided by the U.S.EPA, the Ohio EPA, and the Fernald Citizen's Advisory Board these past few weeks.

Please feel free to contact me at (513)738-1688 if you have questions.

Sincerely,



Lisa Crawford  
President  
F.R.E.S.H., Inc.

LC:eac

cc's: files

Jim Saric, USEPA  
Tom Winston, OEPA  
Senator George Voinovich's Office  
Senator Mike Dewine's Office  
Rep. Rob Portman's Office  
Rep. Steve Chabot's Office  
Jessie Roberson, DOE/HDQ  
Robert Warther, DOE/OFO



## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

JAN 30 2004

Mr. James A. Saric, Remedial Project Manager  
United States Environmental Protection Agency  
Region V, SR-6J  
77 West Jackson Boulevard  
Chicago, IL 60604-3590

OH-0191-04

Dear Mr. Saric:

This letter is in reference to our January 13, 2004, telephone conversation.

As we discussed, there may be an opportunity to remove the Monitored Natural Attenuation and other groundwater related initiatives from consideration as alternatives in the final Fernald Risk Based End State (RBES) document. Removal of these initiatives would better focus both of our resources on discussions concerning necessary site infrastructure changes that will result in the most efficient Groundwater Treatment at Fernald.

I look forward to working collaboratively with your agency, Ohio EPA, the Fernald Citizens Advisory Board and other interested stakeholders to further refine that concept into yet another step toward significant improvement to the Fernald Cleanup.

If you have any questions, please feel free to contact me at 513-246-0018.

Sincerely,

A handwritten signature in cursive script, reading "Robert F. Warther", is written over a circular embossed seal.

Robert F. Warther  
Manager

cc:

Gary Schafer, USEPA  
Tom Winston, OEPA  
Graham Mitchell, OEPA  
James Bierer, FCAB  
Bill Taylor, OH/FCP







## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

JAN 30 2004

Mr. John Dowlin, President  
Hamilton County Commissioners  
138 E. Court Street, Room 603  
Cincinnati, OH 45202

OH-0193-04

Dear Mr. Dowlin:

I would like to extend an invitation to the Hamilton County Commissioners to visit the Fernald Closure Project (FCP). This year promises to be the most significant ever in the remediation of the Fernald site. We will begin extraction and treatment of waste from Fernald's silos, complete the demolition of our former production buildings, and complete treatment and shipment of material from the Waste Pits.

The visit to Fernald will give you a first hand look at the progress being made toward our 2006 cleanup completion goal, and provide you and the other Commissioners with the opportunity to meet site managers who can answer any questions you might have on Fernald's cleanup and post closure plans.

We will contact your staff in the near future to arrange a date for your visit. I look forward to seeing you at Fernald.

Sincerely,

A handwritten signature in cursive script, reading "Robert F. Warther".

Robert F. Warther  
Manager

cc:  
Bill Taylor, OH/FCP





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

2004 JAN 13

REPLY TO THE ATTENTION OF

Mr. Robert Warther  
United States Department of Energy  
Ohio Field Office-Springdale  
175 Tri-County Parkway  
Cincinnati, Ohio 45246

SR-6J

RE: RBES and Site Infrastructure

Dear Mr. Warther:

Thank you for your January 30, 2004, letter regarding our January 13, 2004, telephone conversation. You are correct in that removal of the Monitored Natural Attenuation and other groundwater related initiatives from consideration as alternatives in the Fernald Risk Based End State (RBES) document would facilitate the initiation of discussions on the necessary site infrastructure changes that will result in the most efficient groundwater treatment at the Fernald site.

I look forward to working collaboratively, with the United States Department of Energy; the Ohio Environmental Protection Agency; the Fernald Citizen's Advisory Board and other interested stakeholders on this issue.

Please contact me at (312) 886-0992, if you have any questions regarding this matter.

Sincerely,

James A. Saric  
Remedial Project Manager  
Federal Facilities Section  
SFD Remedial Response Branch #2

cc: Jim Woolford, U.S. EPA-FFRRO  
Jessie Roberson, U.S. DOE  
Johnny Reising, U.S. DOE-Fernald  
Tom Schneider, OEPA-SWDO  
Graham Mitchell, OEPA-SWDO

**memorandum**

Ohio Field Office

DATE: FEB - 9 2004

REPLY TO: FCP:Reising  
ATTN OF:

OH-0208-04

SUBJECT: **FERNALD CLOSURE PROJECT DRAFT RISK-BASED END STATE VISION**

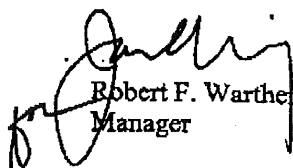
TO: Jessie Hill Roberson, Assistant Secretary for Environmental Management, EM-1

On November 22, 2003, the Fernald Closure Project (FCP) submitted an initial version of the FCP Draft Risk-Based End State (RBES) Vision. A revised version of this document was due to you by February 1, 2004. In order to accommodate the changes we recently discussed and to incorporate document revisions and reproduction, it has been necessary to delay this re-submittal until February 20, 2004.

Based upon further review, evaluation and stakeholders and regulator interaction, the RBES Vision being pursued at the FCP for groundwater has been modified. The most cost-effective infrastructure to support groundwater remediation Post 2006 Closure will be identified and installed to replace the Advanced Waste Water Treatment Facility. This alternate infrastructure would not require formal changes to the Operable Unit 5 Record of Decision or associated regulatory permits.

The FCP RBES Vision is being modified to reflect this initiative. We anticipate obtaining stakeholder and regulatory consensus pertaining to this action by March 31, 2004.

If you have any questions, please contact me at (513) 246-0018.

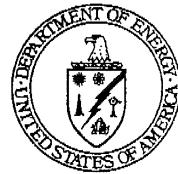
  
Robert F. Warther  
Manager

cc:  
J. Lehr, EM-34  
J. Kang, EM-51  
J. Craig, OH/OOM  
S. Smiley, OH-PA  
W. Taylor, OH/FCP





**Department of Energy**  
**Ohio Field Office**  
**Fernald Environmental Management Project**  
**P. O. Box 538705**  
**Cincinnati, Ohio 45253-8705**  
**(513) 648-3155**



February 20, 2004

DOE-0163-04

Distribution

**FERNALD CLOSURE PROJECT REVISED DRAFT RISK-BASED END STATE  
VISION**

On February 20, 2004, the Fernald Closure Project (FCP) submitted a revised draft Risk-Based End State (RBES) Vision document to the Assistant Secretary for Environmental Management (EM-1). The revised RBES Vision document has been modified based on comment received from the DOE-HQ RBES Review Team, Stakeholders and Regulators. The text that has been modified is underlined in the document.

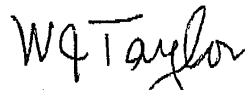
The RBES Vision being pursued relative to Groundwater at the FCP is to identify and install the most cost effective infrastructure to replace the Advanced Waste Water Treatment Facility prior to Site Closure. This alternate infrastructure removes Monitored Natural Attenuation from consideration and would not require formal changes to the Operable Unit 5 Record of Decision or associated regulatory permits.

In order to provide maximum availability for review and comment, the OH Web page ([www.ohio.doe.gov/RBES.asp](http://www.ohio.doe.gov/RBES.asp)) contains the links to the prior and current versions of the OH Sites Draft RBES Vision documents including the FCP, February 20, 2004 version. A copy of the current version of the FCP Draft Vision document is enclosed.

The final RBES Vision document is to be submitted to EM-1 on March 30, 2004. In order to allow the FCP to appropriately consider all public comments in our submittal, I am once again soliciting your input and comments on these documents by March 15, 2004.

If you have any questions regarding this matter, please contact me at 513-648-3101.

Sincerely,

  
William J. Taylor  
Director

FCP:Reising

Distribution

-2-

DOE-0163-04

Enclosure: As Stated

cc w/o enclosure:

R. Warther, DOE/OH  
J. Craig, DOE/OH  
G. Griffiths, DOE/OH  
S. Smiley, DOE/OH  
D. White, DOE/OH  
B. Taylor, OH/FCP  
D. Kozlowski, OH/FCP  
J. Reising, OH/FCP  
G. Stegner, OH/FCP  
P. Yerace, OH/FCP  
E. Woods, Fluor Fernald, Inc./MS65-2

### Distribution List:

Mr. James A. Saric  
Remedial Project Manager  
U. S. Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, IL 60604-3590

Mr. William E. Muno, Director  
U. S. Environmental Protection Agency,  
Region V  
77 West Jackson Blvd.  
Chicago, IL 60604-3590

Mr. Graham Mitchell  
Ohio Environmental Protection Agency  
401 East 5<sup>th</sup> Street  
Dayton, Ohio 45402

Ms. Vicki Dastillung, FRESH  
3069 Hamilton-Scipio Road  
Hamilton, Ohio 45013

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406 Marcia Avenue  
Hamilton, Ohio 45013

Mr. Marvin Clawson  
586 Charlberth Drive  
Hamilton, Ohio 45013

Ms. Jane Harper  
9456 Dick Road  
Harrison, Ohio 45030

Dr. Gene Willeke  
Miami University  
Institute of Environmental Sciences  
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Oxford, Ohio 45056

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401 East 5<sup>th</sup> Street  
Dayton, Ohio 45402

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U. S. Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, IL 60604-3590

Mrs. Lisa Crawford, FRESH  
10206 Crosby Road  
Harrison, Ohio 45030

Ms. Carol Schroer, FRESH  
9886 State Route 128  
Harrison, Ohio 45030

Dr. Thomas Wagner, FCAB Vice Chair  
1086 W. Galbraith Road  
Cincinnati, Ohio 45231

Mr. Robert G. Tabor  
214 Citation Circle  
Harrison, Ohio 45030

Ms. Sandy Butterfield  
4535 Morgan Ross Road  
Hamilton, Ohio 45013

Mr. Doug Sarno, Technical Support  
1055 N. Fairfax, Suite 204  
Alexandria, VA 22314

Mr. Gene Jablonowski  
Remedial Project Manager  
U. S. Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, IL 60604-3590

Mr. Thomas Winston, Chief  
Ohio Environmental Protection Agency  
Southwest District Office  
401 East 5<sup>th</sup> Street  
Dayton, Ohio 45402

Ms. Pam Dunn, FRESH  
7781 New Haven Road  
Harrison, Ohio 45030

Ms. Edwa Yocum, FRESH  
9850 Hamilton Cleves Pike  
Harrison, Ohio 45030

Mr. Steve Depoe  
Department of Communications  
University of Cincinnati  
P. O. Box 210184  
Cincinnati, Ohio 45221-0184

Dr. M. Kathryn Brown  
5137 Salem Hill Lane  
Cincinnati, Ohio 45230

Mr. Lou Doll  
6595 Bridgetown Road  
Cincinnati, Ohio 45248

Mr. William Knollman  
7493 Willey Road  
Hamilton, Ohio 45013

United States Government

Department of Energy

Ohio Field Office

# memorandum

Fernald Environmental Management Project

DATE: February 20, 2004

REPLY TO

ATTN OF: FCP:Reising

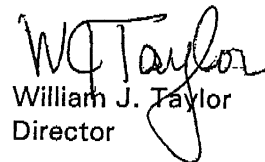
DOE-0136-04

SUBJECT: FERNALD CLOSURE PROJECT DRAFT RISK-BASED END STATE VISION

TO: Jessie Hill Roberson, Assistant Secretary for Environmental Management, EM-1/FORS

Attached for your review is the second version of the Fernald Closure Project Draft Risk-Based End State (RBES) Vision. The RBES Vision has been revised based on comments received from the DOE-HQ RBES Review Team. Pursuant to the February 9, 2004 letter from the Ohio Field Office Manager to you, the RBES Vision related to groundwater has been modified. Copies of Stakeholder and Regulator correspondence related to the RBES Vision have been added to Appendix B.

If you have any questions, please contact me at 513-648-3101.

  
William J. Taylor  
Director

Attachment: As Stated

cc w/attachment:

J. Lehr, EM-34/CLOV

J. Kang, EM-51/CLOV

cc w/o attachment:

R. Warther, OH/Springdale

J. Craig, OH/Springdale

G. Griffiths, OH/Springdale

S. Smiley, OH/Springdale

G. Stegner, OH/FCP

T. Hagen, Fluor Fernald, Inc./MS1

D. Sizemore, Fluor Fernald, Inc./MS5

J.D. Chiou, Fluor Fernald, Inc./MS64

M. Jewett, Fluor Fernald, Inc./MS52-5

J. Wagner, Fluor Fernald, Inc./MS76

S. Walpole, Fluor Fernald, Inc./MS76

E. Woods, Fluor Fernald, Inc./MS65-2

## CROSBY TOWNSHIP BOARD OF TRUSTEES

### RESOLUTION

WHEREAS, The United states Department of Energy, on November 13, 2003, presented an Executive Summary concerning Fernald site's Draft Risk Based End State Vision Document; and

WHEREAS, the aforementioned document raises serious concerns to the public health and safety of the residents of Crosby Township and surrounding areas due to the fact that the Ohio Environmental Protection Agency finds all of the proposals unacceptable; and


WHEREAS, the United States Department of Energy has recommended certain alterations or changes to the original Draft Risk-Based End State Vision Document without sufficient input and evaluation from local officials and the public; and

WHEREAS, these aforementioned decisions were reached over years of education, discussion and compromise, the pressure to implement these changes ignores all the effort put in by the community, the public officials, site personnel and regulators over the past ten years; and

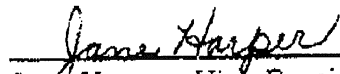
WHEREAS, Hamilton County commissioner, Todd Portune, is committed to support the original framework and ROD (Record of Decision);

THEREFORE, The Crosby Township Board of Trustees endorses and supports the effort to hold the Department of Energy to the terms of the original ROD.

Approved this 23rd Day of February 2004

  
Warren E. Strunk, President

  
Gary Storer, Trustee

  
Jane Harper, Vice President

  
Attest: Jane Pirman



RESOLUTION No. 10-04

Hamilton

County, Ohio

Colerain

Be It Resolved by the Township Trustees of.....Township, that

Whereas after 10 years of collaboration, three groups consisting of FRESH, OEPA and USEPA and Flour Fernald, agreed upon the Department of Energy's (DOE) Records of Decision (RODS) for Flour Fernald, and

Whereas the DOE is possibly considering changes to the Risk Base End State (RBES) draft document concerning the Flour Fernald cleanup, and

Whereas the impact that this change could potentially have on the RODS is a great concern to the members of Fresh, OEPA, USEPA, and Colerain Township Board of Trustees, especially with the concerns of a potentially more hazardous clean-up process, now therefore

Be It Resolved that the Colerain Township Board of Trustees is in support of the stance to honor the RODS as originally proposed by the Department of Energy for the clean up of Fernald without any deviation.

RECEIVED

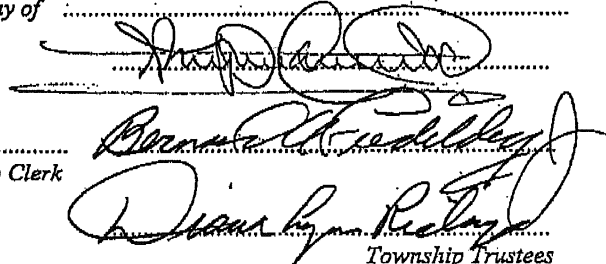
MAR. 1 - 2004

Todd Portune

Adopted the 24<sup>th</sup> day of February 2004

Attest:.....

Township Clerk

  
Township Trustees

# Fernald Atomic Trades & Labor Council

AFL - CIO Metal Trades Affiliated



Gene Branham, President

Allen "Mooch" Callaway, Vice President

Carl "Rock" Root, Financial Secretary

Tina Mefford-Craig, Recording Secretary

Ray Beatty, Trustee

Joseph Siciliano, Trustee

Marcel Monroe, Trustee

Gene Lang, S/A

Leland Russell, Guide

Richard Tinsley, Safety Director

Ray Beatty, Training Director

Leland Russell, CPI Advocate

Pete Branham, CPI Advocate

March 9, 2004

The Honorable Jessi Roberson

The Department of Energy has suggested alternatives to what they've chosen to characterize as The Current State at the Fernald Environmental Remediation Site. The Current State to which they refer to is, in fact, the Consent Decree they entered into fifteen years ago. This document mandates the goals for remediation (including aquifer restoration) and limitations on contaminant discharges to the Miami River at this site. The community has in good faith embraced D.O.E.'s commitment to these mandates. From the outset the members of the Fernald Atomic Trades and Labor Council have worked tirelessly to achieve the remediation goals established by the Consent Decree. Now D.O.E. would like to change the rules.

Simply put, D.O.E.'s priorities have changes and they're looking for a fiscal shortcut to conclude their activities at the Fernald Site. To do this they must convince E.P.A. and the community that regulatory shortcuts are in order. The community opposes taking any of the shortcuts suggested by D.O.E. The Fernald Atomic Trades and Labor Council also strongly objects to the changes that have been suggested.

D.O.E.'s alternatives in one form or another all come down to removing and treating less contaminated groundwater from the site and discharging more contaminants to the Miami River. They hope that time and dilution will take care of the rest. This is not what they originally promised to do. It's not the end result our members have worked so hard to achieve. We believe future generations will condemn us if we allow the clean-up of the Fernald site to be cut short by shifting near-term fiscal priorities. Yet this is exactly what D.O.E. is suggesting.

Another D.O.E. proposal is to do an overall averaging of the radioactivity levels to decide what waste can go into the on-site disposal facility, instead of the current rule that caps the level of radioactivity for individual pieces of waste. This also is not what was promised and could further compound the problem for future generations.

From 1951 to 1989 our members produced the finest uranium products obtainable within D.O.E.'s nuclear weapons complex. We contributed our best efforts towards maintaining our country's strategic defense. At the end of the Cold War we redirected our focus to the remediation of the Fernald site. We've devoted ourselves to this goal with the same pride in doing the best job possible that we exemplified during the previous thirty eight years of production. Despite D.O.E.'s changing priorities we're still committed to remediating the Fernald site safely and completely.

D.O.E. has presented lots of charts, graphs, and statistics to show that their alternatives to complying with the Consent Decree will pose "no significant risk" to the public. We're sure they've sponsored mountains of studies which also just happen to support their immediate objectives. One thing these studies can't claim, however, is that the contaminants we leave behind will just disappear. In seventy million years, ninety-nine percent of all the uranium left in the ground at Fernald or dumped into the Miami River will still be somewhere. It may be slowly diffusing through the Miami Aquifer - a sole source aquifer for hundreds of thousand of people. It may be gradually working its way through the ecosystems of the Miami and Ohio Rivers on its way to an already stressed Mississippi delta. What will the generations to come think of us when our contaminants show up on their doorstep? How much will it cost them to remedy the problems that D.O.E.'s alternatives potentially create? How little will it cost us to stick to the goals we set out to achieve fifteen years ago?

Sincerely,

  
Gene Branham

President, Fernald Atomic Trades & Labor Council

Cc: Commissioner Todd Portune  
Senator George Voinovich  
Senator Mike DeWine  
Representative Rob Portman  
Representative Ted Strickland  
Representative Steve Chabot  
Gary Stegner, DOE Fernald



March 10, 2004

Mr. Robert Warther  
DOE Ohio Field Office  
175 Tri-County Parkway  
Springdale, OH 45246-3222

Dear Mr. Robert Warther,

*Chair*  
James C. Bierer

*Vice Chair*  
Lisa Crawford

*Members*  
M. Kathryn Brown  
Sandy Butterfield  
Marvin W. Clawson  
Lisa Crawford  
Stephen P. Depoe  
Louis Doll  
Pamela Dunn  
Gary Storer  
Robert G. Tabor  
Gene E. Willeke

*Ex Officio Members*  
L. French Bell  
Gene Jablonowski  
William Taylor  
Graham Mitchell

*Support Staff*  
The Perspectives Group

The Fernald Citizens Advisory Board is writing to clarify our recommendations and concerns regarding the long-term strategy for meeting DOE's legal requirements to remediate uranium contamination in the Great Miami Aquifer. As you know, the aquifer is the most important source of drinking water in the region. As such, all plans for groundwater remediation are critically important to the FCAB and other Fernald stakeholders. Remediation and protection of the aquifer were the driving factors in all of our recommendations and subsequent decisions with regard to waste disposition, soil cleanup levels, and the waste acceptance criteria for the on-site disposal facility. The FCAB has been satisfied with the original cleanup agreements, which were reached nearly a decade ago through extensive shared learning and negotiation, and as such, looks upon proposed changes to those agreements with a very critical eye.

The FCAB was gratified that DOE dropped its proposals to increase discharge limits and eliminate the treatment of groundwater. This allowed stakeholders to concentrate on the reasonable options for amending DOE's strategy to complete groundwater remediation. The FCAB is also pleased with the tremendous effort made by Fluor Fernald to create and share information so that we could all engage in meaningful dialogue about the options. We hope that these efforts signal a desire by DOE to return to the types of participation and constructive relationships that made Fernald the success that it is today.

Based on the information provided in recent months, the FCAB believes that the proposal to replace AWWT with a smaller facility for the post-closure period at Fernald has merit. Most importantly, we believe that the safe D&D of the AWWT facility and associated soils can be most effectively conducted while on-site experience and capacity are in place rather than having to hire new contractors and remobilize needed equipment at some future date. This provides added assurance to the public that this final piece of major infrastructure will be safely and efficiently disposed of. Managing the final disposition of a much smaller and simpler unit will certainly be easier and result in fewer impacts to the surrounding community when the time comes for its ultimate disposal.

Mr. Robert Warther  
March 10, 2004

and dialogue about this important topic, especially to those residents directly affected by this proposed change. This is especially important as this proposed action would extend, by a number of years, the time until area residents can enjoy unrestricted and safe use of the aquifer. The continued and dramatic decreases in resources for communication and public participation are making it increasingly difficult to engage in the kinds of activities that are necessary to effectively handle these difficult late changes to cleanup. The public outcry that arose last fall regarding proposed changes to groundwater cleanup is one example of the need for early and complete communication with stakeholders.

#### **6. Reinvestment of Savings**

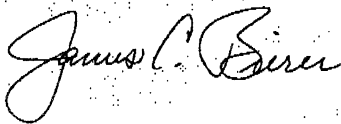
The FCAB requests that any savings realized as a result of this action be given back to Fernald in the form of increased resources for the long-term stewardship of the site, particularly for ongoing community outreach designed to maintain awareness of the site. The FCAB strongly believes that community awareness of the site, its risks, and the controls that are in place to manage those risks is critical for the continued protection of human health and the environment. Outreach programs would also help draw people to the site and transform the site into a community asset.

#### **7. Timely Communication of Groundwater Decisions**

If DOE receives approval from regulators to proceed with action to replace AWWT with a smaller facility and D&D AWWT for disposal in the OSDf, the FCAB expects to be notified immediately of this decision and provided with a full explanation of all criteria and provisions placed on this decision by the regulators. Furthermore, the FCAB wants to be kept informed of progress and data related to the implementation of these decisions.

Considering the importance and time-critical nature of this issue, the FCAB requests very detailed responses to our concerns and issues before the decision is finalized. We expect a response that reflects the same level of care and understanding that we have invested in addressing this issue so that we may understand exactly how each of the above factors will be incorporated into DOE's actions. If there is any further input or information that you require of the FCAB, please do not hesitate to contact us.

Sincerely,



James C. Bierer  
FCAB Chair



Lisa Crawford  
Vice-Chair

cc:

Jaime Jameson  
Sandra Waisley  
Mike Owen  
SSAB Chairs

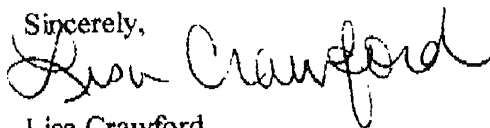
Page 2

The cleanup of the Fernald Closure Project should focus on carrying out the agreements already in place. The methods, cleanup levels and timetables set forth in those agreements are technically feasible and ethically responsible. The agreements were negotiated by multiple parties - DOE, the USEPA, the OEPA and stakeholder organizations like FRESH, Inc. These agreements represent the minimum, not the maximum, obligation that DOE has to the community surrounding the Fernald Closure Project.

Thank you for the opportunity to yet again comment on the RBES, though we must note our dismay that only one (1) public meeting was held on the RBES. Moreover, we note that the RBES Vision is based in part on DOE's "Top To Bottom Review", which also lacked broad stakeholder participation. We at FRESH, Inc. strongly believe that the cleanup of contaminated sites benefits from public participation. That has been clearly and successfully proven here at the Fernald Closure Project. Community knowledge and input contribute to both good science and a democratic decision-making process.

Please feel free to contact me at (513)738-1688 or (513)738-8055 if you have questions and/or need clarification.

Sincerely,



Lisa Crawford  
President  
FRESH, Inc.

LC:eac

cc's: files

Jim Saric, USEPA  
Tom Winston, OEPA  
Senator George Voinovich's Office  
Senator Mike Dewine's Office  
Rep. Rob Portman's Office  
Rep. Steve Chabot's Office  
Jessie Roberson, DOE/HDQ  
Robert Warther, DOE/HDQ



# Hamilton County

## Board of County Commissioners

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President of the Board  
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Phil Heimlich  
Commissioner  
Phone (513) 946-4409  
Fax (513) 946-4407

Todd Portune  
Commissioner  
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Fax (513) 946-4444

Jacqueline Panioto  
Clerk of the Board  
Phone (513) 946-4414  
Fax (513) 946-4444

March 11, 2004

Gary Stegner  
Fluor Fernald  
U.S. Department of Energy  
P.O. Box 538705  
Cincinnati, Ohio 45253-8705

Dear Mr. Stegner:

The Board of County Commissioners, at its meeting on February 11, 2004 adopted a Resolution providing comment to the Secretary of Energy on the continued clean-up/closure at the Fluor Fernald Uranium Processing Site.

I am enclosing a certified copy of said resolution for your records.

Very truly yours,

A handwritten signature in cursive script, reading "Jacqueline Panioto".

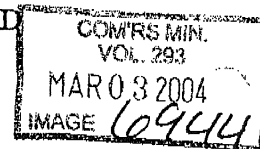
Jacqueline Panioto, Clerk  
Board of County Commissioners  
Hamilton County, Ohio

Enclosure  
JP/das

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2004 MAR 15 A 11:39  
LOG 10529  
FERNALD

On motion of Mr. Portune, seconded by Mr. Dowlin the following resolution was adopted.

**RESOLUTION PROVIDING COMMENT TO THE SECRETARY OF ENERGY ON  
THE CONTINUED CLEAN-UP/CLOSURE AT THE FLUOR FERNALD  
URANIUM PROCESSING SITE**



20-1  
**WHEREAS**, the Board of County Commissioners, Hamilton, Ohio acknowledges the accomplishments to date of all parties involved in the cleanup of the Fernald Uranium processing plant site, and;

**WHEREAS**, the Records of Decision process should serve as the model for other sites across the county; and;

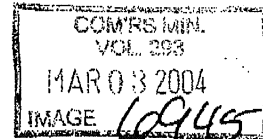
**WHEREAS**, multiple regulatory, as well as, other governmental agencies came together with the battered community nearly a decade ago, and after years of debate they jointly established the standard all could support, in an effort to return the Fernald site to the community in a way that would honor the sacrifices that had been made by individuals and the community as a whole during the Cold War; and;

**WHEREAS**, the Board of County Commissioners resolved to provide comment to the Department of Energy by the March 15, 2004 deadline established in the recently proposed Risk Based End State document after hearing the concerns of the participants in their March 1, 2004 Commission meeting; and

**NOW, THEREFORE BE IT RESOLVED** that the Board of County Commissioners of Hamilton County, Ohio supports the continued and strict adherence to the legally binding Records of Decisions (RODS), and that no such changes as outlined by the recently released Risk Based End State (RBES) document be given consideration as they only serve to undermine the integrity of the pre-existing plan and the very lengthy and public process that was undertaken to reach consensus; and

**BE IT FURTHER RESOLVED** that the Board of County Commissioners, Hamilton, Ohio desires to emphasize the importance of providing the highest level of safety standards as the Fernald Closure Project reaches the most dangerous final phases with the treatment and removal of material from the silos; and





**BE IT FINALLY RESOLVED** that the Clerk of the Board of County Commissioners be and is hereby authorized to certify copies of this resolution to the Secretary of Energy, the Ohio, Congressional Delegation, USEPA, OHIO EPA, FRESH and Fluor Fernald.

**ADOPTED** at a regularly adjourned meeting of the Board of County Commissioners this 3rd day of March, 2004.

Mr. Heimlich.    **AYE**

Mr. Portune.    **AYE**

Mr. Dowlin.    **AYE**



## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

MAR 12 2004

Mr. John S. Dowlin, Commissioner  
Board of County Commissioners  
County Administration Building, Room 603  
138 East Court Street  
Cincinnati, Ohio 45202

OH-0245-04

Dear Commissioner Dowlin:

I am writing to follow up on our March 1, 2004 meeting between representatives of the Department of Energy (DOE) and the Hamilton County Commissioners. During the meeting, the Commissioners requested information on the next steps in the Risk Based End States (RBES) process.

By March 31, 2004, the Fernald Closure Project (FCP) will finalize its RBES Vision document and submit it to the DOE Office of Environmental Management at DOE Headquarters (HQ). As with previous drafts of the Vision, the document will include letters or other feedback provided by the regulators or stakeholders throughout development of the Vision. This feedback will be taken into consideration by the Department as it determines, for each EM Site, whether DOE Site Management should initiate dialogue with the regulators on pursuit of a Risk-Based End State that is different from the current regulatory framework (e.g., existing Records of Decision). Any eventual decision by the Department to pursue such a dialogue with the regulators, at one or more EM sites, will take into account the objectives and desires of the local governments and affected stakeholders.

As discussed at our meeting, the current Fernald RBES Vision Document does not propose modifications to currently approved groundwater Records Of Decision (ROD). However, modifications to the site surface and groundwater treatment facilities are being discussed with regulators and stakeholders. Preliminary indications are that there may be a way to reduce the size of the site water treatment facility, dispose of it in the On Site Disposal Facility prior to site closure, and continue to meet current regulatory discharge limits without any modification to existing RODs.



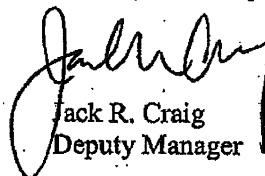
Commissioner Dowlin

-2-

MAR 12 2004

I want to thank you again for the opportunity to meet with you and the other Commissioners, and reaffirm my commitment to meet with you periodically to update you on the progress of the Fernald cleanup.

Sincerely,



Jack R. Craig  
Deputy Manager

cc:

Commissioner Heimlich  
Commissioner Portune

March 15, 2004

Mr. William Taylor  
Fernald Closure Project  
7400 Willey Road  
Hamilton, OH 45103-9402

FERNALD \_\_\_\_\_  
LOG E-0541

2004 MAR 16 A 9:30

FILE: 6446.led1

LIBRARY: \_\_\_\_\_

Dear Mr. Taylor,

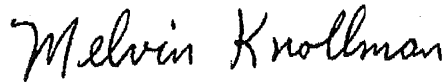
I am writing this letter to express my concern over the plans to remove the Old Outfall Line running from the Fernald Site to the Great Miami River. Fluor Fernald representatives notified us of the scheduled removal in the last few weeks because design and planning work are being initiated on the project and removal is scheduled for the Fall of 2004. As you may be aware, the Old Outfall Line is approximately 4,000 feet in length and is almost all on Knollman Farm, Inc., property. The entire length of the Outfall Line on our property is under cropland that is actively farmed. As the landowner and concerned stakeholder most affected by this action, I am requesting that DOE reconsider its plans for the removal of the Old Outfall Line. It is our understanding that involvement of affected landowners and stakeholders is required for remediation projects under CERCLA.

In late 1992, the Old Outfall Line was taken out of service and the New Outfall Line was installed (see attached photos). The installation of this line disturbed more than 15 acres of cropland and the impacts of that action are still apparent today in the form of decreased crop yields and poor soil conditions. The extreme compaction of the soil during the backfilling of the New Outfall Line resulted in many areas along the length of the line holding water that had not held water in the past. In addition, the mixing of topsoil and subsoil during the backfilling of the line, left the soil in very poor condition and crop yields have still not returned to historic levels. If it is avoidable, we do not want this type of disturbance and interruption to our operation repeated.

It is our understanding that there may be ways to cement grout the Old Outfall Line in place and avoid the removal of the line. We would like to request that DOE explore every possibility related to grouting the line in place before making a decision to remove the line. It is also our understanding that the New Outfall Line will need to be removed after completion of the Aquifer Remediation Project in approximately 2021. We would also object to removal of the New Outfall Line and would request that DOE find a way to leave that line in place.

Please contact us at (513) 738-1745 if there are any questions regarding this matter. If there is benefit in writing letters to the Ohio EPA and U.S. EPA, please let us know. Your cooperation in this matter is greatly appreciated.

Sincerely,

A handwritten signature in cursive script that reads "Melvin Knollman".

Melvin Knollman, Vice President  
Knollman Farms Inc.

Attachment: 1992 Aerial Photos

P10F2

DATE 3-15-04

TO: D.O.E. - OHIO FIELD OFFICE - FCP  
P.O. Box 538705  
CINCINNATI, OH 45253-8705

FROM: ROBERT G. TAYLOR  
214 CITATION CIR  
HARRISBURG, OH 45030

REF. - RBES (RISK-BASE END STATE)

ATTN: WILLIAM J. TAYLOR, DIRECTOR

DEAR MR TAYLOR,

EVEN THOUGH I AM A MEMBER OF THE FCAB,  
FRESH, and FAT&LC, THE FOLLOWING IS MY  
RESPONSE AS AN INDIVIDUAL STAKEHOLDER  
RELATIVE TO THE RBES.

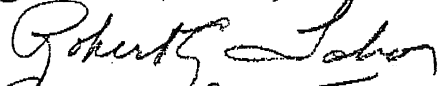
COMMENTS:

- 1.) I AM NOT IN FAVOR OF CHANGING ANY OF  
THE "AGREED TO" STANDARDS OR LEVELS OF  
CLEAN-UP.
- 2.) CONCERNING THE GROUND WATER CLEAN-UP  
ALTERNATIVES MOST RECENTLY PROPOSED,  
ANY ALTERNATE TECHNOLOGY WOULD OR  
SHOULD HAVE SUFFICIENT CAPABILITY  
TO MEET THE NECESSARY CAPACITY AND  
THEN SOME, AS WELL AS, THE QUALITY  
CAPABILITY. I FEEL THE CURRENT FACILITY,

P2 of 2

AWWT, MEETS THAT CAPABILITY BOTH FROM A CAPACITY AND QUALITY PERSPECTIVE - SOME DOWN SIZED RENDITION OF THE AWWT MIGHT BE A BETTER CONSIDERATION IF FEASIBLE, IN AS MUCH AS, THAT TECHNOLOGY AND SYSTEM HAS A PROVEN TRACK RECORD.

- 3.) I DEFINITELY AM NOT IN FAVOR OF ANY WAC - AVERAGING CONCEPTS OR IDEAS. REGARDLESS OF THE WASTE DISPOSAL OPPORTUNITIES IT MAY OFFER WITH RESPECT TO COST & SCHEDULE, I DO NOT FORESEE DOING THAT (WAC-AVERAGING) AS A WISE DECISION, PUBLIC PERCEPTION WILL BE NEGATIVE AND PUBLIC TRUST COMPROMISED, AND THIS SITE AS A BENCHMARK FOR CLEAN-UP WOULD BE DISTORTED. I BELIEVE WAC-AVERAGING WOULD ALSO, BE POLITICALLY UNFAVORABLE.
- 4.) I AM IN FAVOR OF SOME FACILITY TO REMAIN TO SATISFY SOME OF THE STEWARDSHIP ISSUES RELATIVE TO RECORDS RETENTION AND EDUCATIONAL NEEDS.

RESPECTFULLY SUBMITTED,  
  
ROBERT G. TABOR

CC JOHNNY REISING



# Hamilton County

## Board of County Commissioners

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President of the Board  
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Commissioner  
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Commissioner  
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Clerk of the Board  
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Fax (513) 946-4444

March 22, 2004

Jack R. Craig, Deputy Manager  
Department of Energy  
Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

Dear Mr. Craig:

Thank you for your letter of March 12, 2004 to President John S. Dowlin, Hamilton County Board of Commissioners. I'm not sure I'm reading your letter correctly and accordingly want to follow up directly with you.

It would appear that your letter suggests an open-ended process which still allows the Department of Energy to modify existing standards or to pursue an approach which could deviate from the existing current regulatory framework, RODs, etc. This appears open-ended notwithstanding the verbal commitment given at our meeting that the DOE would not be pursuing such a strategy as it relates to the Fernald site. Specifically, the department agreed that it was withdrawing any efforts to produce Risk Based End States relative to Fernald.

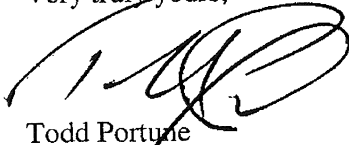
If I am misreading your correspondence, I would ask that you please advise me at your earliest convenience. If not, then it represents a marked departure from the discussion that we had.

You had also agreed to provide to us by the middle of March, the name or names of the individuals and/or entities who could in essence "trump" the verbal recommendations you were giving to us. In other words, even if you gave us assurances that there would be no relaxation of standards or modification of decisions, could someone else do that and if so, who is/are that someone else? I see no mention of that in your letter and write to formally make such a request.



Should you have any questions, please do not hesitate to contact me.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Todd Portune', written over a horizontal line.

Todd Portune

TBP/ld

cc: Board of County Commissioners; Tom Winston, Ohio EPA; Lisa Crawford, FRESH; Keith N. Corman, Colerain Township Trustees; Warren Strunk, Jr., Crosby Township Trustees; Herbert Brown, Whitewater Township Trustees

John T. Conway, Chairman  
A.J. Eggenberger, Vice Chairman  
John E. Mansfield  
R. Bruce Matthews

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901  
(202) 894-7000



April 5, 2004

The Honorable Spencer Abraham  
Secretary of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Secretary Abraham:

In testimony and presentations at recent public meetings, the Defense Nuclear Facilities Safety Board (Board) has noted references made by a number of Department of Energy (DOE) officials to DOE initiatives aimed at the characterization and management of risk at defense nuclear facilities. Further, in a recent policy statement, the Office of Environmental Management directed its field elements to develop risk-based end states in their cleanup activities, and separately, the National Nuclear Security Agency (NNSA) designated its site managers as the risk acceptance officials for NNSA sites. However, the framework for these risk characterization and management activities has not been made clear.

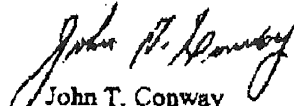
In a related activity, the Board has reviewed the DOE's use of risk management tools at defense nuclear facilities. This review revealed that DOE and its contractors have employed risk assessment in a variety of activities, including the development of documented safety analyses and facility-level decision making. The level of formality of these assessments varies over a wide range. The Board's review also revealed that DOE does not have mechanisms (such as standards or guides) to control the use of risk management tools nor does it have an internal organization assigned to maintain cognizance and ensure the adequacy and consistency of risk assessments. Finally, the Board's review showed that other federal agencies involved in similar high-risk activities (e.g., National Aeronautics and Space Administration, U.S. Nuclear Regulatory Commission) have, to varying degrees, formalized the use of quantitative risk assessment in their operations and decision-making activities. These agencies have relevant standards and defined organizational elements, procedures, and processes for the development and use of risk management tools.

The Honorable Spencer Abraham

Page 2

As a result of these observations, the Board would like to understand DOE's perspective and expectations regarding the use of formal risk assessment in its oversight and operations at defense nuclear facilities. Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests that the responsible officials brief the Board within 60 days of receipt of this letter as to DOE's ongoing and planned programs and policies for assessing, prioritizing, and managing risk.

Sincerely,



John T. Conway  
Chairman

c: The Honorable Jessie Hill Roberson  
The Honorable Beverly Ann Cook  
The Honorable Everet H. Beckner  
Mr. Mark B. Whitaker, Jr.



April 6, 2004

The Honorable Jessie Hill Roberson  
Assistant Secretary for Environment Management  
Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0104

*Chair*

James C. Bierer

*Vice Chair*

Lisa Crawford

*Members*

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Sandy Butterfield  
Marvin W. Clawson  
Lisa Crawford  
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Louis Doll  
Pamela Dunn  
Jane Harper  
Robert G. Tabor  
Gene E. Willeke

*Ex Officio Members*

L. French Bell  
Gene Jablonowski  
William Taylor  
Graham Mitchell

*Support Staff*

The Perspectives Group

Dear Ms. Roberson:

We are writing to ask about the status of our letter dated December 3, 2003 regarding Risk Based End States (RBES) activities at the Fernald site. That letter was detailed and carefully considered and asked that RBES activities be halted at Fernald. To date, we have received no response from your office.

We were reminded of this issue when reading your March 1, 2004 remarks to the Waste Management Symposium '04. At that time, you reinforced your assertion that DOE cleanups have not taken risk into account in making decisions. As our letter clearly demonstrated, this is simply not true at Fernald. All of the key decisions here were based clearly on risk reduction to a reasonable end use (in Fernald's case, an undeveloped park). In addition, risk to workers and transportation risks were carefully considered in making on- vs. off-site disposal decisions. It was this consideration of risk by stakeholders which resulted in over 70 percent of waste by volume remaining on site.

We have attached our December 3 letter here for your additional review and look forward to a response from you no later than May 6, 2004.

Sincerely,

James C. Bierer  
FCAB Chair

Lisa Crawford  
FCAB Vice-Chair

cc:

Senator Mike DeWine  
Senator George Voinovich  
Representative John Boehner  
Representative Steve Chabot  
Representative David Hobson  
Representative Rob Portman  
SSAB Chairs  
Bob Warther

United States Government

Department of Energy

# Memorandum

DATE: APR 06 2004

REPLY  
TO  
ATTN OF: EM-23 (John Lehr, 301-903-2011)

SUBJECT: Draft Fernald Environmental Management Closure Project Risk-Based End State Vision Document

TO: Robert F. Warther, Manager, Ohio Field Office

The principles of the Department of Energy's (DOE) Top-to-Bottom Review have transformed the Office of Environmental Management's purpose from simply managing risk at the expense of taxpayers, to accelerating real risk reduction by expeditiously cleaning up the Cold War legacy. A cornerstone of this effort is the development of a site-specific Risk-Based End State (RBES) Vision Document for each DOE site, pursuant to DOE Policy 455.1, *Use of Risk-based End States*, and associated guidance. RBES and its documentation in an associated RBES Vision Document depict appropriately protective and sustainable site conditions, by which current regulatory and other parameters can be described, evaluated and contrasted. This is not a decision document, rather, it is intended to support informed decisionmaking regarding responsible site cleanup. Development of a RBES Vision and identification of potential variances from a current end state do not signal an intent to perform less cleanup, nor to pursue shortcuts around current laws, regulations or agreements. Furthermore, while a RBES approach may ultimately reduce cleanup costs, the RBES vision is not driven by cost considerations.

My office has reviewed the draft Fernald Closure Project RBES Document. The review determined that the document generally meets the requirements of the RBES policy and guidance. The February draft is well-written and appears to be complete. Additional information has been included in response to comments from the previous draft. New text describing ecological risk assessments performed and how the results were incorporated into the remedial strategy has been included. Citations for risk assessment and other records of decision reports have been added. The end-state use is appropriately risk-based and is consistent with the surrounding land uses. The end-state land use also has buy-in from stakeholders.

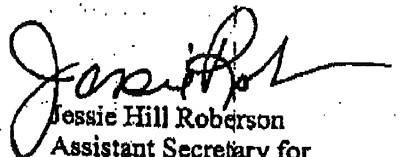
Additional information and detailed comments from review of the draft RBES Vision Document will be provided by my staff for your use in improving your RBES documentation for resubmission. Final documents particularly should address the identified risk management issues should clearly identify the basis for, timing of, and uncertainty in risk estimates.

Because of the importance of involving stakeholders in the RBES Vision process, I want to ensure that there is adequate time for this to occur. No RBES Vision Document will be considered final without having benefited from an open and timely public outreach initiative.

RBES Vision documents must reflect this dialog and be sensitive to stakeholders concerns. We will not proceed without this step, but because RBES Vision development is essential for informed decisionmaking in the cleanup process, plan to complete the document by September 1, 2004. Please submit a schedule to headquarters outlining major milestones for RBES document development and public interactions that reflect this completion date.

Note that there is not a direct linkage between identification of a variance from a baseline and actual pursuit of that objective. If it is in fact, decided that a particular risk-based approach is suitable, we will ensure that all appropriate legal and regulatory requirements are followed in actions to implement any revised approach.

If you should have any questions, please contact Mr. Eugene C. Schmitt, Deputy Assistant Secretary for Environmental Cleanup and Acceleration, at (202) 586-0755 or Mr. John Lehr at (301) 903-2011.

  
Jessie Hill Roberson  
Assistant Secretary for  
Environmental Management

cc: W.J. Taylor, Manager, Fernald Closure Project Office



## Department of Energy

Ohio Field Office  
175 Tri County Parkway  
Springdale, Ohio 45246

April 9, 2004

Mr. Todd Portune  
Board of Commissioners  
County Administration Building  
138 E. Court Street, Room 603  
Cincinnati, Ohio 45202

OH-0289-04

Dear Commissioner Portune:

I am writing in response to your March 22 letter to clarify the Department of Energy's Risk Based End States (RBES) policy.

During our March 1 meeting with the Hamilton County Commissioners, and in several previous meetings with local elected officials and stakeholders, we stated that due to public concerns DOE would not pursue any changes to currently approved groundwater remediation levels or uranium discharge limits. This modification to Fernald's initial RBES proposal has been approved by DOE- HQ Office of Environmental Management (EM-1), the office with programmatic responsibilities for DOE's RBES initiative. Other components of our RBES strategy, not related to groundwater, remain in our draft RBES Vision document, which has been submitted, along with all stakeholder comments, to EM-1 for review. The enclosed April 6 memorandum from EM-1 provides the latest guidance on the RBES path forward. While final documents are not now due to HQ until September 1, 2004, Fernald's will likely be submitted shortly after resolution of HQ comments, since extensive public input has already taken place with regulators and stakeholders. EM-1 will then determine if any of Fernald's remaining RBES proposals should be pursued.

As we said during our March 1 meeting, DOE cannot unilaterally change a Record of Decision or any legally binding regulatory agreement. Changes in such agreements can only be achieved with the involvement of Fernald's stakeholders and the approval of the U.S. and Ohio Environmental Protection Agencies. You will recall that Mr. Tom Winston from the Ohio Environmental Protection Agency (OEPA), stated at the meeting that his agency is not receptive to any changes in the Fernald cleanup. Lisa Crawford, speaking for local residents, also stated categorical opposition to any changes in Fernald's cleanup. Based on this reality, and the fact that such stakeholder and regulator comments are contained in the RBES document submitted to HQ, it is extremely unlikely that EM-1 will direct Fernald to pursue any significant changes in the site's approved Records of Decision. We will keep you informed on all RBES developments, including any guidance that Fernald receives from DOE Headquarters.

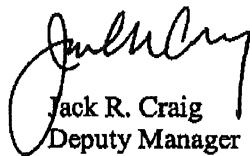


Mr. Todd Portune

-2-

In closing, I would like to invite you to visit Fernald for a site tour. Calendar Year 2004 promises to be pivotal in the cleanup, and we look forward to your continuing interest and involvement at Fernald.

Sincerely,



Jack R. Craig  
Deputy Manager

Enclosure: As Stated

cc w/enclosure:

William Muno, USEPA

Tom Winston, OEPA

William J. Taylor, OH/FCP

J. S. Dowlin, Hamilton County,

Board of Commissioners

P. Heimlich, Hamilton County,

Board of Commissioners



United States Government

FERNALD

LOG E-0630 Department of Energy

# Memorandum

2004 APR 16 A 11:25

DATE: APR 13 2004

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REPLY TO  
ATTN OF: EM-23 (John Lehr, 301-903-2011)

SUBJECT: Review Comments of Draft Risk-based End State Vision Document Fernald Closure Project

TO: William J. Taylor, Manager, Fernald Closure Project

The concept of Risk-based End States (RBES) is founded on achieving site closure in a responsible, sustainable and environmentally protective manner, consistent with planned site land use. The Department of Energy (DOE) will complete cleanup work quicker, safer, and more efficiently when RBES drives its site assessment, remedy selection, and actions to assure long term protectiveness. DOE Policy 455.1 *Use of Risk-Based End States* requires the development of a RBES Vision document, and a comparison of its end states with those currently planned. This comparison will be used as a basis for consideration of changes to cleanup strategies and baselines to align them with the end state vision.

My office has received the draft Fernald RBES Vision Document and the headquarters RBES review team has completed its evaluation. Attached are the detailed comments on the Vision document for your use in improving the RBES documentation. These comments have been informally discussed with your staff.

The Assistant Secretary for Environmental Management will provide further direction under separate memorandum. Office of Environmental Management staff will be available to assist the Fernald Site staff, as requested, in reviewing the final RBES document submission.

If you have any questions on the attached comments, please contact Mr. John Lehr of my staff at (301) 903-2011.



Robert Goldsmith, Ph.D.  
Director  
Office of Core Technical Group  
Environmental Cleanup and Acceleration

Attachment

Comments to Fernald Closure Project RBES Vision Document Checklist  
March 18, 2004

**Part I. Specific Content Questions for RBES Vision Document:**

**Land use**

- 1. Does the site have a land use plan that fully describes the end state and the future land use at the site?**

Yes

- 2. For PSO sites, is the land use plan consistent with the Site Ten-Year Plan and Institutional Plan?**

N/A

- 3. Has the future land use been communicated to the regulators and is it acceptable to them?**

The proposed future land-use was selected through discussions between the Fernald CAB, USEPA, Ohio EPA and DOE, and documented in the January 1996 OU5 ROD.

- 4. Is the site's land use plan fully integrated with planned land use of the areas adjacent to the site? If not, are there receptors that require different level of protection than land use designation would imply?**

An undeveloped park reuse designation is consistent with the prevailing residential/farming land use currently surrounding the site. Total population within a 5-mile radius of the site is only 22,900 which is indicative of a more rural area.

Groundwater cleanup of the Great Miami Aquifer, however, is to residential standards and not associated with the proposed future land use.

- 5. Is the site's cleanup plan consistent with the end state depicted in its land use plan in terms of cleanup levels, future uses, and remaining hazards? If not, what is not consistent, and how is it inconsistent.**

Most of the site's surface soil cleanup plan is consistent with a recreational user being the primary receptor

The on-site and off-site groundwater cleanup plan is not consistent with the proposed future land use, and is driven by the regulatory based requirement to reduce contaminate levels in the Great Miami Aquifer (GMA) to residential drinking water standards. Previous discussions about limiting future pump & treat operations and relying more on MNA, or

using a mid-river point of compliance (instead of the outfall) to reduce the long-term need to treat ground and surface waters, appear to have been dropped by the site in this RBES version.

- 6. Have the landowners (current and planned) been identified and communicated with regarding the RBES Vision? Is the land ownership of the site and immediate surrounding areas clearly identified in the Vision document? If so, are those landowners in agreement with the planned land use?**

The proposed future land-use was selected through discussions between the Fernald CAB, USEPA, Ohio EPA and DOE, and documented in the January 1996 OU5 ROD. No change in land use is proposed under the RBES Vision.

The RBES cleanup strategies have been discussed with regulators and other stakeholders, and several proposed changes have already been eliminated by the site since September to meet their objections.

#### **Risk/hazards**

- 7a. Is risk (ES&H risk, not project risk) fully and explicitly considered in the Vision document? Is this risk consideration appropriate and consistent with the site's end-state use so that cleanup standards are consistent with the planned end state land use?**

Most of the site's surface soil cleanup plan appears consistent with risks to a recreational user as the primary receptor, however the RBESV notes that it is overly conservative to use surface soil standards based on inhalation for sediments that are covered by water (streams, ponds and other open water areas). The site proposes standards that are more risk-based.

The current restrictions on maximum contaminate levels of soils and debris deposited in the OSDF, the buffer zone, and perimeter fence will make it protective of a risk-level of  $10^{-7}$  to the recreational user. The RBES proposes to blend wastes and use an averaging method of measuring for total Uranium within each cell, versus the current not to exceed restriction. This will result in the OSDF still being protective of human health at a risk level of  $10^{-5}$ . The impact of any resultant leachate discharge limit change was not specified.

The on-site and off-site groundwater cleanup plan is driven by the regulatory based requirement to reduce contaminate levels in the Great Miami Aquifer (GMA) to residential drinking water standards.

- 7b. The RBES Guidance requires risk balancing as part of the overall consideration of risk in cleanup of DOE sites (see the Guidance Clarification). Does the RBES Vision document encompass "risk balancing" in its discussion of overall risks associated with the remainder of the EM mission at the site? This would include for example risks to current as well as future on-site and off-site populations, workers**

responsible for achieving the designated cleanup at the site, and risks to off-site populations resulting from off-site transportation of contaminated materials. These risks should be described in the document for both the current cleanup baseline and the RBES.

Risks to off-site and on-site populations and ecological receptors have been considered in the remediation strategy for the site and are discussed in the report. The discussion could be expanded to include risk balancing considerations such as risk to workers conducting the building demolition and possible transportation risk associated with off-site disposal of waste. OK

**8. Have all the hazards that will remain, that drive the land use, been identified?**

All of the hazards driving future land use have apparently been identified.

**9. Are the hazards remaining left in a condition that is protective to human health and the environment (ecological receptors), if applicable?**

Yes, cleanup goals/standards have been established with consideration to the appropriate human and ecological receptors. Clarify *whether the untreated OSDF leachate and surface waters in the former production area will be protective of ecological receptors under the RBES scenario.*

**10. Are the residual hazard levels protective of the end-state?**

Residual hazard levels appear to be protective of the end-state under RBES, but more discussion should be provided regarding the risks associated with leaving the outfall lines and drains. Additional information on the sustainability and protectiveness of the proposed institutional controls and monitoring systems would strengthen the document.

**11. If restrictions are imposed on any contaminated environmental medium (e.g., ground water), are they clearly stated along with the basis for the restrictions?**

Yes.

**12. Do the Conceptual Site Models and narratives reference the site risk-assessment reports where they are completed?**

A Comprehensive Risk Analysis and Risk Evaluation (CRARE) was developed in 1994 in conjunction with the OU4 ROD, and updated in each subsequent ROD.

**13a. Have all EM cleanup remedies that are either in place or anticipated to be enacted undergone a formal risk assessment, and have those documents been approved for use by the appropriate senior DOE site manager? For instances where a site-wide risk assessment is yet to be performed, has such risk assessment been similarly**

**approved? If a risk assessment has not or will not be performed, the RBES Vision document should so state and justify why not.**

A Comprehensive Risk Analysis and Risk Evaluation (CRARE) was developed in 1994 in conjunction with the OU4 ROD, and updated in each subsequent ROD. Additional formal risk assessments were not prepared for changes proposed under RBES.

**13b. Is the conceptual site model complete? Is it sufficient to identify a sustainable risk-based end state? Does it consider all the pathways and receptors at risk (from both human health and ecological perspectives)? Are the major assumptions and uncertainties for each CSM clearly stated?**

A RBES CSM is presented for each of the four hazard areas discussed in the report. The CSMs are in a format that is consistent with the guidance. Human and ecological receptors and their pathways are shown. The hazard areas presented in the report address only elements that are associated with the variances presented in the Attachment and do not depict the status of other site components (e.g., buildings and silos mentioned in Table 1.1) at the end of the cleanup or at the RBES.

**13c. Is the CSM and narrative consistent?**

Yes, the CSMs and the accompanying narratives are consistent.

**13d. Is sufficient information provided as follows?**

- **List of hazards/contaminants of concern and their concentration levels, as well as the cleanup level for each hazard**
- **Pathways to the environment**
- **Projected risk levels expected and/or concentrations expected after remediation**
- **Basis in risk for existing requirements, or for regulatory limits, to provide the risk context for the applied limit**

The report discusses uranium primarily because it is the site's main COC. Other COCs are discussed within the context of ecological impacts indicated by the ecological risk assessment.

Contaminant concentrations are generally not presented but cleanup goals/standards for uranium for the various media are discussed.

**13e. Are all potential receptors and pathways identified?**

Generally yes. *All potential ecological receptors and pathways associated with OSDF leachates and other possibly contaminated surface waters in the former production area under RBES are not identified.* The cleanup goal for uranium in groundwater is the MCL; but the CSMs (particularly Figure 4.3b2) do not show a potential human receptor to the

groundwater itself but only to surface water discharges. Clarify if the MCL is meant to protect off-site (resident) receptors?

**13f. For all potentially complete exposure pathways identified in the current state CSM, Does the RBES CSM show that the pathways will be blocked?**

Generally yes. (see comment in 13b).

**13g. Is information on plumes provided (i.e., depth of plume, extent of plume, some measure of rate of movement of plumes to the extent that it aids the explanation of the risk basis for the end state under discussion.**

Yes, to the extent that it aids in the risk basis explanation.

**13h. Has a failure analysis been completed? Are the failure modes for each barrier identified, and are their consequences adequately described?**

A Performance Assessment of the OSDF analyzed failure modes.

#### **Cleanup Strategy/Regulatory**

**14a. Are the current/existing remedial decisions driven by risk-based end states (on a media-by-media basis for air, water, soil, etc., or other appropriate basis)? Are the statements in the document consistent throughout the text?**

Several current cleanup strategies are not risk-based. Most of the site's surface soil cleanup plan appears consistent with risks to a recreational user as the primary receptor, however the RBESV notes that it is overly conservative to use surface soil standards based on inhalation for sediments that are covered by water (streams, ponds and other open water areas). Supporting analysis on stream and pond coverage would strengthen this position.

The current restrictions on maximum contaminate levels of soils and debris deposited in the OSDF, the buffer zone, and perimeter fence will make it protective of a risk-level of  $10^{-7}$  to the recreational user. The RBES proposes to blend wastes and use an averaging method of measuring for total Uranium within each cell, versus the current not to exceed restriction. This will result in the OSDF still being protective of human health at a risk level of  $10^{-5}$ .

The on-site and off-site groundwater cleanup plan is not risk-based and is instead driven by the regulatory based requirement to reduce contaminate levels in the Great Miami Aquifer (GMA) to residential drinking water standards. Previous proposals to limit future pump & treat operations and relying more on MNA, and use of a mid-river point of compliance (instead of at the outfall) to reduce the need to treat ground and surface waters, have been dropped by the site because of strong objections raised by regulatory and public stakeholders.

**14b. If there are future remedial decisions that have not been made, is there any information that the decisions will be driven by risk based end states?**

All decisions have been made.

- 15. Since RBES is forward looking, environmental cleanup actions in place need not be examined explicitly. But environmental cleanup actions pending as a result of decisions already made but not yet implemented, and those implemented but that will continue to have project cost and schedule impacts (e.g., ground water pump and treat systems) should be reviewed as part of the RBES Vision development process. Are these decisions consistent with the RBES Vision? If not, have they been based on more or less conservative risk-scenarios or assumptions?**

Cleanup decisions appear to be consistent with the RBES Vision

- 16. Are the regulatory drivers/standards for cleanup of the site clearly stated? For both the currently planned end state and the RBES? What are the “disconnects” between the current cleanup path as required by the regulatory drivers and that based on projected land use and the associated risk?**

Yes. Also see 13 d.

- 17. Have the future roles and responsibilities of the parties involved in site cleanup been identified (e.g., DOE, current owner, future owner, other federal and state agencies)?**

Yes

- 18. To what degree does the site’s regulators, key stakeholders, Tribal nations and local government representatives agree with the currently identified and the planned risk based end-state?**

The discussion under Section 1.3.1 on pages 1-7 and 1-8, and the letters included in Attachment B, indicate that the stakeholders and regulators have issues and concerns with the proposed RBES for Fernald.

#### **Variances**

- 19. Has the vision document identified all applicable variances between the current end state and the RBES?**

Appropriate variances have been identified

- 20. If potential variances are not listed, list variances that should be considered and provide short description for each.**

N/A

- 21. Were the variances adequately evaluated per the guidance (e.g., per page D-1 of the guidance are the key attributes [cost, schedule, scope and risk] listed, are barriers identified, and are next steps identified)?**

Variances were appropriately evaluated.

**Other Comments (cross cutting issues, coordination with other programs and Corporate Projects)**

- 22. List as Comments any other items of concern with the document, such as text that is confusing, clarity and completeness of maps and CSMs.**

The Cleanup Status section on page 1-2 through 1-7 (including Table 1.1) should use consistent units of measure. The units of volume are given in cubic feet and cubic yards. The numbers given in Table 1.1 are listed as the "Status as of July 2003", but they are the same numbers listed on page 1-7 which are labeled "as of January 2004".

- 23. The reviewer's overall perception regarding his/her review of the site's RBES document should be summarized through statements responding to the following:**

- a. Does the site RBES submission adequately articulate an end state vision for the site that is risk based, readily sustainable, appropriately protective of human health and the environment, and consistent with the site and surrounding area's planned land use? Explain and cite examples.

The February draft is well-written; appears to be complete and addresses all the elements required by guidance. Additional information has been included in response to comments from the previous draft. New text describing ecological risk assessments performed and how the results were incorporated into the remedial strategy has been included. Citations for risk assessment and other relevant decision reports (RODs) have been added. The end-state use is appropriately risk-based and is consistent with the surrounding land uses. The end-state land use also has buy-in from stakeholders.

An additional variance associated with the shut down and subsequent dismantling and disposal of the water treatment facility (the AWWT) is presented in this draft. Information regarding interaction with the stakeholders over the RBES process has also been updated.

- b. Are variances between the end state RBES vision and the current site cleanup baseline end state clearly identified and defined? Explain.

Appropriately defined

- c. If there is no variance identified, is there adequate justification as to why the current site cleanup baseline end state meets the requirements for a RBES, i.e.,



does the RBES document show that the cleanup is sustainable, protective, and consistent with the site's surrounding land use? Explain.

N/A, there are four variances identified in Attachment A.

d. Is a conference call with the site necessary?

No

#### **Part 1a. Comments addressing improvements to the RBES Vision documents**

**24. The comments that will be generated in response to the questions in Checklist Parts I & II will for the most part address the compliance of the RBES Vision document with the RBES Policy statement and its associated published guidance. That is, the review team conclusions to the questions will in summary provide to the sites that information and the specific changes to the document necessary to produce a compliant document.**

In addition to this information, the RBES Review Team is to provide back to the sites items for consideration that would improve the RBES Vision document(s). These comments are to be separately identified as improvement items, as opposed to compliance items.

This could include for example, recommendations for additional contextual information that would further the explanation of any proposed individual RBES, or a site's position that the currently planned end state is appropriately risk based and sustainable. Other data, analyses, or examples illustrating positions being proposed germane to the RBES Vision discussion or justification could be recommended for inclusion if that would make an RBES hypothesis more readily understandable.

Another fruitful area would include additional information to be included in the Variance report that would provide analysis of the variance(s) of the RBES from currently planned end state(s). Such analyses could be aimed at identifying issues, obstacles, and concerns with the variances identified and how the Department will address and resolve them.

- a. The items listed under Question #23 in Part I should be considered again for the purposes of this section of the Checklist. That is, what improvements in the RBES Vision document clarity could be made to improve either its understanding or otherwise support decision making by DOE relative to pursuit of any change in EM project/site end state and subsequent initiation of discussions with site regulators, stakeholders, or interested or affected Governments?

A discussion of the "Current Planned End State" could be added for each of the four Hazard Areas in Section 4.0.

**Checklist Part II – Crosswalk to the RBES Guidance – MAPS CRESP**

Fernald Closure Project (FCP)

Checklist Completed: March 8, 2004

Guidance Section	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
Executive Summary			
Section 1 Introduction	1.1 Organization of the Report		
	1.2 Site Mission		
	1.3 Status of Cleanup		
Section 2.0 Regional Context RBES Description <sup>1</sup>	2.1 Physical and Surface Interface		
	Narrative		
	Map 2.1a Regional Physical and Surface Interface – Current State	NO	Due to the close proximity between current and RBES only RBES is required.
	Map 2.1b Regional Physical and Surface Interface – RBES	YES	Well Done. Scale should be smaller to see more of the region. Contact information and map creator should be included. It looks as if a USGS topo map was used as a base. A contour or DEM would have been better to show topology and would remove the fuzzyness. What about off site wetlands?
	2.2 Human and Ecological Land use		
	Narrative		
	Map 2.2a Regional Human and Ecological Land Use – Current State	NO	See comments from 2.1a

Guidance Section	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
	Map 2.2b Regional Human and Ecological Land Use – RBES	YES	Well Done. Scale should be smaller to see more of the region. Contact information and map creator should be included.
	<b>2.3 Other Supporting Information (optional)</b>		
	Narrative		
	Map 2.3a <sup>2</sup> Site Defined Custom Configuration—Current State	N/A	
	Map 2.3b Site Defined Custom Configuration—RBES	N/A	

Guidance Section	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
Section 3.0 Site Specific RBES Description <sup>1</sup>	<b>3.1 Physical and Surface Interface</b>		
	Narrative		
	Map 3.1a <sup>3</sup> Site Physical and Surface Interface – Current State	NO	See comments from 2.1a
	Map 3.1b Site Physical and Surface Interface – RBES	YES	Well Done. Scale should be smaller to see more of the region. Contact information and map creator should be included.
	<b>3.2 Human and Ecological Land use</b>		
	Narrative		
	Map 3.2a Site Human and Ecological Land Use – Current State	NO	See comments from 2.1a
	Map 3.2b Site Human and Ecological Land Use – RBES	YES	Well Done. Make sure the land use refers to something other than land cover. This will explain the inconsistency between 3.2b and 2.2b. Scale should be smaller to see more of the region. Contact information and map creator should be included.
	<b>3.3 Site Context Legal Ownership</b>		
	Narrative		
	Map 3.3a Site Legal Ownership – Current State	NO	See comments from 2.1a
	Map 3.3b Site Legal Ownership – RBES	YES	Well Done. Scale should be smaller to see more of the region. Contact information and map creator should be included.

Guidance Section	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
	<b>3.4 Site Context Demographics</b>		
	Narrative		
	Map 3.4a Site Demographics– Current State	NO	See comments from 2.1a
	Map 3.4b Site Demographics– RBES	YES	Well Done. Scale should be smaller to see more of the region. Contact information and map creator should be included.
	<b>3.5 Other Supporting Information (optional)</b>		
	Narrative		
	Map 3.5a Site Defined Custom Configuration– Current State	N/A	
	Map 3.5b Site Defined Custom Configuration– RBES	N/A	

Guidance Section	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
4.0 Hazard Specific Discussion <sup>1</sup>	4.0 Site Wide Hazard		
	Narrative		
	4.0a Site-wide Hazard Map – Current State	NO	See comments from 2.1a
	4.0b Site-wide Hazard Map – RBES	YES	Well Done.
	4.0a2 <sup>4</sup> Site-wide CSM <sup>5</sup> – Current State	NO	
	4.0b2 <sup>4</sup> Site-wide CSM – RBES	NO	
	4.1 Hazard Area 1 (insert area name)		
	Narrative		
	4.1a1 Hazard Area 1 (insert area name here) Map – Current State	NO	See comments from 2.1a
	4.1b1 Hazard Area 1 (insert area name here) Map – RBES	YES	Well Done. Contact information and map creator should be included. NPL Symbol not necessary at this scale. Better as additional text.
	4.1a2 Hazard Area 1 (insert area name here) CSM – Current State	NO	See comments from 2.1a
	4.1b2 Hazard Area 1 (insert area name here) CSM – RBES	YES	
	4.2 Hazard Area 2 (insert area name)		
	Narrative		
	4.2a1 <sup>6</sup> Hazard Area 2 (insert area name here) Map – Current State	NO	See comments from 2.1a
	4.2b1 <sup>6</sup> Hazard Area 2 (insert area name here) Map – RBES	YES	Well Done. Contact information and map creator should be included. NPL Symbol not necessary at this scale. Better as additional text.
	4.2a2 Hazard Area 2 (insert area name here) CSM – Current State	NO	See comments from 2.1a

Guidance Section	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
	4.2b2Hazard Area 2 (insert area name here) CSM – RBES	YES	

Guidance Section	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
4.0 Hazard Specific Discussion <sup>1</sup>	4.3 Hazard Area 3 (insert area name)		
	Narrative		
	4.3a1 Hazard Area 3 (insert area name here) Map-Current State	NO	See comments from 2.1a
	4.3b1 <sup>6</sup> Hazard Area 3 (insert area name here) Map – RBES	YES	Well Done. Contact information and map creator should be included. NPL Symbol not necessary at this scale. Better as additional text.
	4.3a2Hazard Area 3 (insert area name here) CSM – Current State	NO	See comments from 2.1a
	4.3b2Hazard Area 3 (insert area name here) CSM – RBES	YES	
	4.4 Hazard Area 4 (insert area name)		
	Narrative		
	4.4a1 Hazard Area 4 (insert area name here) Map – Current State	NO	See comments from 2.1a
	4.4b1 Hazard Area 4 (insert area name here) Map – RBES	YES	Well Done. Contact information and map creator should be included. NPL Symbol not necessary at this scale. Better as additional text.
	4.4a2 Hazard Area 4 (insert area name here) CSM – Current State	NO	See comments from 2.1a
	4.4b2 Hazard Area 4 (insert area name here) CSM – RBES	YES	



Guidance Section	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
Guidance Section Attachment 1— Variance Report <sup>7</sup>	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
	A Table containing a description of each variance, the impacts of the each variance, barriers to achieving the RBES and recommendations/next steps.		
	Figure 1 Site wide hazard specific map –end state per the current agreements.		
	Figure 2 Site wide hazard specific map-RBES		

Guidance Section	Subsection	Included in Document?	Comment (i.e. well done, missing xxx etc)
<sup>1</sup> Some sites with near term closure dates are not required to produce current state portion of the RBES vision document. See attachment 1 of the RBES vision guidance for the list of sites.			
<sup>2</sup> Maps starting 2.3a and beyond are optional. Site should name the maps as appropriate using the numbering system provided in Guidance Appendix B, Section 2-Regional Context Maps, Figure 2-1			
<sup>3</sup> For Site Context Maps, “map sets” are designed rather than single maps to provide sites with the flexibility to layer one to several feature categories. (Refer to Guidance, Appendix B, Section 3.0- Site Context Maps, and Figure 3-1.)			
<sup>4</sup> For small sites, when all hazard areas can be shown clearly on the site-wide hazard maps, hazard maps and CSM are not required. In such case, site-wide hazard CSM-current state (4.0a2) and site-wide hazard CSM-RBES (4.0b2) should be provided. Note: the closure site rule applies and only the RBES is required.			
<sup>5</sup> Conceptual Site Modes (CSM) consist of a figure and a narrative as described in Guidance, Appendix C.			
<sup>6</sup> Continue to number for each hazard area 1 though x.			
<sup>7</sup> Refer to Guidance Appendix D.			



## Department of Energy

Washington, DC 20585

May 21, 2004

Mr. James C. Bierer  
Chair, Fernald Citizens Advisory Board  
M.S. 76  
P.O. Box 538704  
Cincinnati, OH 45253-8704

Dear Mr. Bierer:

Thank you for your April 9, 2004, and December 3, 2003, letters requesting that Risk-Based End State (RBES) activities not be applied to the Fernald Environmental Management Project.

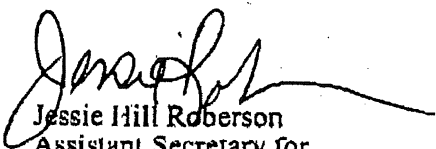
Over the years the Fernald Citizens Advisory Board has provided the Department of Energy (DOE) with the concerns and perspectives of the local community, and we appreciate your input on RBES. The DOE wants to achieve site closure in a responsible, sustainable and environmentally protective manner based on a quantified, technically-sound endpoint. Doing so requires an understanding and acceptance by all parties of the delicate balance between worker and public risk, as well as fiscal and moral responsibility. Development of the RBES vision document for Fernald will ensure that this objective is met.

We are deferring any consideration of an alternative end state for Fernald until the vision document is completed later this year. I want to ensure you that if we propose an alternative we will follow the procedures of the Comprehensive Environmental Response, Compensation, and Liability Act and other applicable regulatory requirements. This process will ensure that consideration is given to stakeholder concerns.

While the product of these activities may or may not result in a change in the current planned end state, the process itself will be beneficial in providing a forum for useful dialog, a more comprehensive analysis of comparative risks, and an up-to-date quantitative foundation for the ultimate end state. I urge you to continue to work with the site to explore the RBES vision and to achieve a mutually satisfactory result.

If you have any further questions, please call me at (202) 586-7709 or Mr. Eugene C. Schmitt, Deputy Assistant Secretary for Environmental Cleanup and Acceleration, at (202) 586-0755.

Sincerely,

  
Jessie Hill Roberson  
Assistant Secretary for  
Environmental Management



Printed with soy ink on recycled paper

JUL-14-2004 12:00

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# Hamilton County

## Board of County Commissioners

John S. Dowlin  
Commissioner  
President of the Board  
Phone (513) 946-4409  
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County Administration Building  
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Cincinnati, Ohio 45202

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[www.hamilton-co.org](http://www.hamilton-co.org)

July 6, 2004

Spencer Abraham  
Secretary of Energy  
U.S. Department of Energy  
1000 Independence Avenue, S.W.  
Washington D.C. 20585

Michael O. Leavitt  
Administrator  
U.S. Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, N.W. (1101)  
Washington D.C. 20460

John D. Ashcroft  
Attorney General  
U.S. Department of Justice  
950 Pennsylvania Avenue, N.W.  
Washington, D.C. 20530

Bharat Mathur  
Acting Regional Administrator  
Region V  
U.S. Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, Illinois 60604

### Fernold Environmental Management Project

Dear Sirs,

Attached you will find a copy of the Resolution passed March 3, 2004 by the Board of Hamilton County Commissioners of the State of Ohio. We share this with you in hopes that you will take the appropriate action to ensure there will be no deviation from the agreed to Records of Decision.

We stand behind our previously approved resolution and trust that all parties will follow the Records of Decision will stand behind the strict interpretation of each component even through Risk Base End State process or Operable Unit 4 decisions. We also trust

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US EPA

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that there will be a safe clear path for continuous removal and transport from the Fernald site.


Discussions here at the local level with representatives from the site have indicated that they have abandoned their earlier concept of extraction prior to having a sure clear safe path off of the Fernald project site and have committed to extract only if such a clear path exists. We would ask that you honor the sentiment expressed by the local DOE.

We are aware that the Attorney General of the State of Ohio has issued a Notice of Intent to File Suit against the Department of Energy which we are poised to support in the event that full compliance with the RODS is not achieved.

Sincerely,

  
John Dowlin, President

  
Phil Helmlich

  
Todd Portune

Post-It® Fax Note		7671	Date	7/14/04	# of Pages	2
To	Lisa Crawford		From	Karen Ball		
Co./Dept.			Co.			
Phone #	948-3777		Phone #	946-4402		
Fax #	948-3811		Fax #	946-4446		

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

JUL 26 2004

REPLY TO THE ATTENTION OF: R-19J

Mr. John Dowlin  
Mr. Phil Heimlich  
Mr. Todd Portune  
Office of the Hamilton County Commissioner  
Room 603  
County Administration Building  
138 East Court Street  
Cincinnati, Ohio 45202

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Dear Sirs:

Thank you for your July 6, 2004, letter to Administrator Leavitt presenting the resolution passed March 3, 2004, by the Board of Hamilton County Commissioners of the State of Ohio. The Administrator has asked me to respond on his behalf. The resolution supports the continued and strict adherence to the Record of Decisions (ROD) at the United States Department of Energy (U.S. DOE) Fernald, Ohio Superfund site.

The United States Environmental Protection Agency (U.S. EPA) is actively conducting oversight of the cleanup and is involved with U.S. DOE, the Ohio Environmental Protection Agency (OhioEPA) and the various stakeholders to ensure the cleanup is conducted in a safe, environmentally protective, and timely fashion.

Although U.S. DOE has the lead in resolution of issues with the State of Nevada and the shipment of the Silos materials to the Nevada Test Site, U.S. EPA is keeping a close watch on the activities at the Fernald, Ohio Site. U.S. EPA has had numerous communications with U.S. DOE, Ohio EPA, and the Ohio Attorney General regarding the Silos project. It is U.S. EPA's position that the existing ROD for the Silos project should be implemented and we are working on accomplishing that task.

U.S. EPA supports the resolution of the Board of Hamilton County Commissioners of the State of Ohio and will continue to work with all of the stakeholders to ensure that the Fernald, Ohio cleanup proceeds as planned.

If you have any questions regarding this matter please contact James Saric of my staff at (312) 886-0992.

Very truly yours,

**Original Signed by**  
**Norman R. Niedergang**

Bharat Mathur  
Acting Regional Administrator

cc:

Spencer Abraham, U.S. DOE  
John D. Ashcroft, U.S. DOJ  
Bill Taylor, U.S. DOE-Fernald  
Tom Winston, Ohio EPA

## RESPONSE TO STAKEHOLDER COMMENTS ON FCP DRAFT RBES VISION

The following provides responses to the general categories of Stakeholder comments received on the Draft RBES Vision for the FCP. The general categories of comments listed below have been taken from the numerous letters received by DOE and from verbal comments received during public forums held on the RBES process.

1. Many reviewers stated that Fernald was too far along in the cleanup process to become involved in the RBES process. With Closure scheduled for 2006, many reviewers felt it was too late for the RBES process at Fernald.

*The DOE feels that the RBES process is worth undertaking at Fernald and may identify opportunities to reduce costs, while maintaining protectiveness, between now and Closure. The DOE has always looked for ways to decrease costs to the taxpayers, while maintaining full protectiveness during cleanup. DOE remains in full compliance with the five Records of Decision (ROD) that govern remediation of the Fernald Site, and is legally required to continue to comply with those RODs. DOE also fully understands that it cannot unilaterally change any portion of the five RODs. It is not the intent of the RBES process to compromise, in any manner, the ability to reach closure of the Fernald Site in 2006.*

2. Some reviewers felt that the "RBES process" was essentially carried out during development of the five RODs at Fernald and during the evaluation of cleanup changes considered since the signing of the RODs. Reviewers stated that RBES is not something new at Fernald, but has been ongoing for years.

*The DOE fully agrees that there have been a number of examples where processes very similar to RBES have been undertaken in developing and evaluating changes to the RODs at Fernald. The DOE understands and appreciates the significant contribution that Stakeholders and Regulators have provided in working out changes to cleanup approaches that have resulted in significant cost savings, while maintaining protectiveness. The RBES process is intended to be a formalized, complex-wide process to accomplish the same types of successes that have been realized at Fernald and other DOE Sites.*



3. There was widespread rejection of the alternatives outlined in both versions of the Draft RBES Vision. Many comments focused specifically on disapproval of the groundwater alternative discussing changes to discharge limits to the Great Miami River and the use of monitored natural attenuation (MNA).

*There is a clear understanding of the objection that Stakeholders and Regulators have to the opportunities outlined in the RBES Vision. The Fernald RBES Vision has been revised to remove the discussion regarding changes to the discharge limits and the use of MNA in groundwater restoration. The DOE would request that reviewers consider each of the opportunities identified on its own merit and not disregard all proposals due to a dislike of the entire process. The DOE will continue to work closely with Stakeholders and Regulators and consider all input received throughout the RBES process.*

4. There were numerous comments about the lack of public and regulatory involvement in the RBES process. Related comments focused on Stakeholders becoming involved late in the RBES Process and the process generally being damaging to Stakeholder relations.

*The RBES Vision was intended to identify all technically supportable, risk-based opportunities for consideration. It is important to note that the RBES Vision is not a decision document and is being developed pursuant to the DOE guidance document. The DOE did make the document available to Stakeholders and Regulators, hold a public meeting on the process and have had numerous informal discussions on the matter meeting the intent of the guidance documents. The Stakeholders and Regulators will have full involvement in the RBES process from this point forward. It is also important to note that DOE cannot unilaterally make any change to a ROD and will have full Stakeholder and Regulator involvement in proposal to change a cleanup decision at Fernald. The DOE has always worked very closely and successfully with Stakeholders and Regulators and plans to continue this close working relationship in the future.*

5. Many comments stated that the RBES Process was not a good use of site resources and was an unnecessary distraction from cleanup. Related comments stated that the RBES Process was essentially a waste of money at Fernald.

*The DOE feels that the RBES process is worth undertaking at Fernald and may identify opportunities to reduce costs, while maintaining protectiveness, between now and Closure. It is important to note that the RBES process is being considered across the DOE complex and while cost reductions at one particular site may seem small, the cumulative impact of the process may be very significant.*

6. Many reviewers felt that the RBES Process was only focused on saving money and would result in a lower quality cleanup at the site.

*The DOE has always looked for ways to decrease cost to the taxpayers, while maintaining full protectiveness during cleanup. It is important that any type of organization periodically evaluate how it conducts business. The RBES process is a formal, complex-wide review of how DOE is approaching cleanup to ensure that the taxpayers are getting the most benefit for their tax dollar. It is important to note that any proposed change to cleanup decisions at Fernald would require that the remedy remain protective of human health and the environment and would have full Stakeholder and Regulator involvement.*

7. There was a single comment supporting the idea of leaving the Outfall Lines in place.

*This comment from the property owner will be included in the Final RBES Vision with all other comments received to date and will be fully evaluated as the next phase of the RBES process is undertaken.*

**FINAL DRAFT RBES VISION DOCUMENT**

**INFORMAL PUBLIC MEETING**

**NOVEMBER 16, 2004**

**TRAILER 214**

**6:30 P.M.**

**RBES = END STATES**

**VARIANCES = ALTERNATIVES**

**DOE Policy 455.1 – *Use of Risk Based End States* - issued July 2003**

**October 2003 – Initial meeting with FCAB and Regulators related to RBES**

**Input Received**

- Not receptive to changes in “cleanup” levels or increases in residual contaminants.
- Process will create distractions and resource demands that would detract from cleanup.
- FCP conducted the RBES process 10 years ago during the RI/FS process.

**November 18, 2003 -        Public Meeting/Distribution of Draft RBES Document**

**November 21, 2003 -        Draft RBES Document submitted to EM-1**

**February 20, 2004 -        Revised Draft RBES Document submitted to EM-1 and Public**

**October 5-6, 2004 –        Workshop related to RBES held in Chicago, Ill.**

**November 16, 2004 –        FCP Final Draft RBES Document Public Meeting and distribution**

**December 1, 2004 -        FCP Final Draft RBES Document Submittal to EM-1**

## **Variances/Alternatives in the Final Draft RBES "End State" Document**

### **Hazard Area 1 – OSDF**

Variance 1-a: Consider mixing/blending/averaging the level of soil and debris in calculating the Waste Acceptance Criteria (WAC) for the OSDF as opposed to soils and debris having to meet a "not to exceed" WAC. **NO**

Variance 1-b: Allow leachate at a rate of 1 gpm to discharge into the surface water bodies in the former production area as long as the surface water Final Remediation Levels are met. **NO**

### **Hazard Area 2 – Subsurface, Soils/Sediments**

Variance 2-a: Apply the sediment FRL's (210 ppm uranium) to streams and ponds as opposed to the surface soil FRL (82 ppm uranium). **NO**

Variance 2-b: Segregation of soils during the deep excavations of foundations meeting the Cross Media Preliminary Remediation Goals (100 ppm uranium) and use as fill vs. having to meet the Production Area FRL's (50 ppm uranium). **NO**

### **Hazard Area 3 – Surface Water/Groundwater**

Variance 3-a: Full restoration of the Aquifer to meet uranium drinking water standards (30 ppb uranium), both on-site and off-site. AWWT Facility would be modified to retain the 1800 gpm of the existing 2600 gpm capacity. This will allow early D&D of 90% of the existing AWWT footprint (soil and debris) and placement in the OSDF prior to Closure. **YES**

### **Hazard Area 4 – Infrastructure**

Variance 4-a: Current regulatory agreements require the removal of both outfall lines, cofferdam and other structures at the Great Miami River. The RBES is to leave the "new" outfall line and related structures in place, since this line has only been subject to at or slightly above drinking water standards outflows. **YES**

Variance 4-b: The current regulatory agreements require building foundations, concrete storage pads and parking lots to be removed as part of soil excavation. The Silos Treatment Facility and Tank Transfer Area structure were installed clean. The concrete debris from D&D of the buildings and foundations will be certified clean and used as clean, hard fill for select deep excavations. In addition, all clean rocks and debris currently in Paddys Run will be certified clean and left in place. **YES**

## **ATTACHMENT C**

### **Groundwater Toolbox Information Excerpts**

# **GROUNDWATER “TOOLBOX”**

## **MEETING OBJECTIVES**

**JANUARY 2004**

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1. To provide the technical and regulatory background needed to frame a future Fernald Citizens Advisory Board (FCAB) Recommendation.
  - In essence, what do we need to know about the treatment system -  
- how it works, what the regulatory framework is, and what its discharge impacts to the environment are -- to make an informed decision?
2. To gain an understanding of the present course we are on (e.g., “status quo” remedy under the Operable Unit 5 ROD).
3. Walk through the decision framework, and the approaches to consider, leading to a new course of action as desired.
4. Answer questions.
5. Outline remaining steps and future meetings leading to a draft FCAB Recommendation.

### **Suggestions for next meeting:**

- Hear from FCAB as to what is important to them.
- Begin to look at dollar tradeoffs.

## **DOE'S GROUNDWATER OBJECTIVE**

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### **DOE's Objective:**

1. Dismantle the Advanced Wastewater Treatment (AWWT) facility and place it in the On-Site Disposal Facility (OSDF) prior to 2006.